

25TH  
ANNUAL REPORT  
ON THE  
HEALTH OF ST. HELENS

**For the Year ending Dec. 31st, 1897,**

BY  
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*Medical Officer of Health ;*  
AND  
*Public Analyst.*

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St. Helens:  
F. HODGSON, PRINTER AND STATIONER, OLD MARKET PLACE.  
1898.

## TABLE OF CONTENTS.

	PAGE
Members of Health Committee and Sub-Committees ... ..	4
Statistical Summary for 1897 ... ..	5
Introduction ... ..	6
Population ... ..	8
Causes of Increase of Population ... ..	9
Distribution and Density of Population ... ..	9
Age Distribution of Population ... ..	10
Births ... ..	11
Illegitimacy ... ..	12
Mortality Rate ... ..	13
Mortality at Various Ages ... ..	16
Infantile Mortality Rate ... ..	17
Vital and Mortal Statistics for 27 years, and Chart No. 1 ... ..	18
Comparative Vital and Mortal Statistics for 33 large towns ... ..	19
"                    "                    "                    for smaller towns ... ..	20
Weekly Mortality Returns for St. Helens ... ..	21
Zymotic Diseases ... ..	22
Small Pox ... ..	24
Vaccination ... ..	25
Measles .. ... ..	25
Scarlet Fever ... ..	28
Diphtheria ... ..	37
Whooping Cough ... ..	39
Typhoid Fever and Charts Nos. 2 and 3 ... ..	40
Diarrhœa... ..	44
Chart No. 4—"Diarrhœa in relation to Temperature ... ..	45
Influenza... ..	47
Erysipelas ... ..	48
Puerperal Fever ... ..	49
Borough Sanatorium and Disinfecting Station... ..	49
Ground Plan of Sanatorium and Block of Large Pavilion ... ..	51

	PAGE.
Parasitic Diseases ...	52
Constitutional Diseases ...	52
Cancer and Malignant Diseases ...	52
Tubercular Diseases ...	52
Local Diseases ...	54
Special Reports, 1897 ...	55
Water Softening Works ...	56
Milk Supplies ...	56
Insanitary Property ...	57
Canal Boats ...	57
Black Smoke Nuisance ...	57
Swine Fever ...	58
Offensive Trades ...	58
Common Lodging Houses ...	58
Slaughter Houses and Meat Inspection ...	58
Report of Public Analyst ...	60
Bakehouses ...	62
Workshops ...	62
Nuisance Inspectors' Work ...	62
Removal of Excrement ...	63
Meteorology ...	64
Rainfall for 30 years ..	65
Appendix showing Buildings, Sewerings, &c. ...	
Table D ...	
„ A ...	
„ B ...	
„ C ...	

**HEALTH COMMITTEE**  
OF THE  
**ST. HELENS CORPORATION,**  
**NOVEMBER, 1897.**

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THE RIGHT WORSHIPFUL THE MAYOR (ALDERMAN R. PILKINGTON, J.P.)  
COUNCILLOR J. FORSTER, J.P., CHAIRMAN.  
„ J. MASSEY, DEPUTY-CHAIRMAN.  
ALDERMAN SIR DAVID GAMBLE, BART., C.B., J.P.  
„ J. C. GAMBLE, J.P.  
„ D. McKECHNIE, J.P.  
„ A. SINCLAIR, J.P.  
COUNCILLOR H. B. BATES, L.S.A.  
„ J. BURCHALL, J.P.  
„ F. A. BURT.  
„ J. FISHER.  
„ J. GREEN, J.P.  
„ E. JOHNSON.

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**HOSPITALS SUB-COMMITTEE:**

THE RIGHT WORSHIPFUL THE MAYOR.  
COUNCILLOR H. B. BATES, L.S.A.  
„ F. A. BURT.  
„ J. FORSTER, J.P.  
„ J. MASSEY.

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**SANITARY SUB-COMMITTEE:**

THE RIGHT WORSHIPFUL THE MAYOR.  
ALDERMAN J. C. GAMBLE, J.P.  
COUNCILLOR H. B. BATES, L.S.A.  
„ J. BURCHALL, J.P.  
„ F. A. BURT.  
„ J. FORSTER, J.P.  
„ J. GREEN, J.P.  
„ J. MASSEY.

## STATISTICAL SUMMARY FOR 1897.

POPULATION—Estimated to the middle of the year—

Males	...	43,266	}	Total	...	82,910
Females	...	39,644				

Natural increase during the year ...	...	...	1,447
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MARRIAGES ... .. 592

Annual Rate of Persons Married per 1000 of the Population ... 714

BIRTHS ...	...	...	Males ...	1,647	} Total ...	3,193
			Females ...	1,546		

Annual Rate of Births per 1000 of Population	...	...	38.51
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Mean	„	„	during years 1887 to 1896	...	...	38.9
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DEATHS...	...	...	Males	...	885	} Total	...	1,746
			Females	...	861			

Annual Rate of Mortality	{ Males...	21·3	Total	...	21·05
per 1000 ...	{ Females	20·7			

Mean Rate during years 1887 to 1896	...	...	...	...	22.02
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Total Deaths from Zymotic Diseases	...	...	...	...	350
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Annual Rate of Mortality from Zymotic Diseases	...	...	4.22
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Mean Rate of Mortality from Zymotic Diseases for years							
1887 to 1896	...	...	...	...	...	...	3.63

Infantile Mortality Rate, 1897	...	...	...	...	...	181
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Mean Rate for years 1887 to 1896	...	...	...	...	170
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# MEDICAL OFFICER OF HEALTH'S DEPARTMENT.

TOWN HALL,

ST. HELENS,

*June 6th, 1898.*

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*To the Chairman and Members of  
The Health Committee,  
Corporation of St. Helens.*

GENTLEMEN,

I have the honour to present to you the 25th Annual Report on the health of the Borough of St. Helens, being the first issued since my appointment to be your Medical Officer.

This report deals with various statistics relating to the Public Health, and also with the work done by the Health Department during the year ending December 31st, 1897.

The Birth Rate for 1897 was 38·5 per 1000, being over 1 per 1000 higher than last year. The continued growth of the population is thus more than maintained.

The Death Rate for 1897 was 21·0 per 1000, being 0·97 per 1000 below the rate of the preceding 10 years.

Taking the statistics as a whole, and allowing for the age and sex constitution of St. Helens, I am of opinion that they compare favourably with those of other large manufacturing towns.

I would take this opportunity of thanking Dr. John Robertson, your late Medical Officer, for his great kindness in permitting me at all times, and in the readiest way, to avail myself of his long experience of the affairs of the Borough, thus rendering valuable assistance which has been of much advantage both to myself and to the work of my department.

I wish also to acknowledge and thank you sincerely for the kindness and assistance which it has been my good fortune to receive from every member of the Committee—and especially the Chairman—from the very first moment I entered upon my duties.

My thanks are also due to the Medical Practitioners in St. Helens for their assistance and cordial co-operation in all efforts to improve the Public Health.

I have further to report that the various officials connected with my department have discharged their duties satisfactorily and conscientiously.

I have thought it advisable, for this year at all events, to present my report strictly on the lines laid down by Dr. Robertson, and bearing in mind my short connection with the Borough, not to introduce any new matter.

I am, Gentlemen,

Your obedient Servant,

F. DREW HARRIS.

## POPULATION.

The population of St. Helens at the middle of 1897 (June 30th) is estimated to have been 82,910 persons. Of this number 43,266 were males and 39,644 females.

In a population growing so rapidly as that of St. Helens, there is always a probability of some error in estimating the number of its inhabitants even when this is done by the most reliable known methods. In such a town the necessity for a Quinquennial Census is much more apparent than in rural districts. Every year, therefore, up to 1901, when the next Census will be taken, will increase the chances of error in estimating the population, and as a necessary consequence will cause more or less fallacious mortality and other statistics.

The method adopted in arriving at the above figures is that used by the Registrar-General, and is based on the assumption that the same rate of increase has continued since 1891 as occurred between 1881 and 1891—*e.g.*

Population 1881	...	...	58,308* (April)
„ 1891	...	...	72,413* (April)
„ 1897	...	...	82,910* (June)

\* Population within the enlarged Borough Area.

Dr. Newsholme suggests a method by means of which the estimate of population, arrived at by the Registrar-General's method, may be checked with fair accuracy. This method is based on the ascertained fact that the birth-rate in any given district remains fairly constant, so long as no new conditions of labour, etc., are introduced. The average birth-rate for the last ten years is therefore found, and from the known number of births which have occurred in the year for which the estimated population is desired, the population is calculated which would give the said number of births at the above-mentioned birth-rate. Thus from 1886 to 1896, the average birth-rate in St. Helens is found to be 38·9 per 1000, whilst the number of births registered during 1897 was 3,193. This number at the above rate (38·9) would give a population of 82,082. To this will have to be added a small number (say 300–400) in order to obtain the mid-year population.

Lastly, the above results may be further checked by the following method—The number of inhabited houses is ascertained from the Rate-books, and this number is multiplied by the average number of persons per house at the last Census. Thus the number of inhabited houses in St. Helens during 1897 was 14,489, and the average number of persons per house at the last Census was 5·77, giving a population of 83,601. It will thus be seen that the estimates arrived at by all these methods closely approximate.

## CAUSES OF INCREASE OF POPULATION.

The following figures show the various increases which have been registered as occurring in St. Helens during the past 15 years :—

Year.	Natural Increase.	Increase due to Immigration.	Estimated Increase.
1883	1152	139	1291
1884	1203	118	1321
1885	1062	286	1348
1886	1193	186	1379
1887	1030	337	1407
1888	1322	118	1440
1889	1236	234	1470
1890	1032	472	1504
1891	1094	440	1535
1892	1408	166	1574
1893	1236	364	1600*
1894	1482	178	1660
1895	1476	234	1710
1896	1339	336	1735
1897	1447	327	1774

\* This number does not include the increase which took place in the new area during 1893.

A natural increase of 1,447 in our population of 82,910 is at the rate of 17·4 per 1000 per annum, against 17·2 in 1896.

In England and Wales during 1897 the natural increase was at the rate of 12·2 per 1000.

## DISTRIBUTION OF THE POPULATION.

In the accompanying Table are given the Statistics relating to the Distribution and density of the Population.

WARDS.	Population Census 1891.	Population estimated to June 30, 1897	Area of each Ward, 1897.			Persons per Acre in 1897.
			Acres.	Ro.	Poles.	
Eccleston, North ..	8555	9788	234	2	30	41·8
Eccleston, South ...	6797	8366	617	3	32	13·5
Central ...	8219	8503	98	0	27	86·7
Windle, North ...	7481	9352	681	1	22	13·7
Windle, South ...	8438	8889	68	3	11	130·7
Hardshaw ...	9225	10276	341	0	0	30·1
Sutton, East ...	8250	9272	1300	2	18	7·1
Sutton, West ...	7418	8989	2424	1	22	3·7
Parr ...	8030	9475	1475	0	0	6·4
Whole Borough ...	72412	82910	7248	0	2	11·4

**AGE DISTRIBUTION, 1897.**

AGES.	CENSUS 1891, Old Borough Area.	Estimated Population at each Age in the Extended Borough, 1897.
Under 1 year ... .. 1 to 2 years ... .. 2 „ 3 „ ... .. 3 „ 4 „ ... .. 4 „ 5 „ ... ..	2398 2143 2140 2068 1967	2789 2492 2489 2405 2288
Total under 5 years ... ..	10716	12463
5 to 10 years ... .. 10 „ 15 „ ... .. 15 „ 20 „ ... .. 20 „ 25 „ ... .. 25 „ 30 „ ... .. 30 „ 35 „ ... .. 35 „ 40 „ ... .. 40 „ 45 „ ... .. 45 „ 50 „ ... .. 50 „ 55 „ ... .. 55 „ 60 „ ... .. 60 „ 65 „ .. ... .. 65 „ 70 „ ... .. 70 „ 75 „ ... .. 75 „ 80 „ ... .. 80 „ 85 „ ... .. 85 „ 90 „ ... .. 90 „ 95 „ ... .. 95 „ 100 „ ... ..	9221 8334 7441 6582 6023 5129 4465 3674 2685 2434 1620 1407 763 461 227 83 19 4 —	10704 9813 8644 7645 6994 5955 5182 4263 3112 2820 1874 1632 887 536 264 96 22 4 —
	71288	82910

## BIRTHS.

The number of Births registered during 1897 was 3,193. This number is 151 above that registered in 1896, and 28 above that registered in 1895. The birth-rate, therefore, is **38·51** per 1000 of the population.

In the following Table will be found the number of births registered during the years 1887 to 1897, and the Birth Rate for each year.

YEAR.	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Totals	Rate per 1000 per year	
1887 .....	651	617	584	604	2456	37·0	
1888 .....	694	668	601	689	2652	39·2	
1889 .....	723	748	624	679	2774	39·8	
1890 .....	754	678	645	699	2776	38·9	
1891 .....	767	684	750	719	2920	40·7	
1892 .....	693	769	719	730	2913	39·7	
1893 .....	745	747	776	731	3029	40·1	
1894 .....	781	716	653	732	2882	37·0	
1895 .....	884	796	775	710	3165	39·8	
1896 .....	777	783	714	768	3042	37·4	
Mean of } 10 years } ...	750	720	684	706	2860	38·9	
1897 {	Males ...	417	396	424	410	1647	} 38·51
	Females.	406	373	389	378	1546	
	Total ...	823	769	813	788	3193	
	Rate per 1000 ...	39·6	37·1	39·2	38·0		

In England and Wales the Birth rate during 1897 was 29·6 per 1000 of the population. The Rate for 1897 in England and Wales was 1·1 per 1000 below that of the previous ten years.

Year.	BIRTH RATES.	
	England and Wales.	St. Helens.
1887	31·9	37·0
1888	31·2	39·2
1889	31·1	39·8
1890	30·2	38·9
1891	31·4	40·7
1892	30·5	39·7
1893	30·8	40·1
1894	29·6	37·0
1895	30·3	39·8
1896	29·7	37·4
<b>1897</b>	<b>29·6</b>	<b>38·5</b>
Mean	30·59	38·9

It will be observed, too, that during 1897, the highest birth rates were registered during the 1st and 3rd quarters.

Of the 3,193 children born during 1897, 1,647 were males, and 1,546 were females, this being in the proportion of 100 males to 93·8 females. At the Census of 1891 there were 100 males to every 91·7 females in St. Helens, whereas in England and Wales at the same period there were 100 males to every 106·4 females.

In Table E will be found the birth rates for each of the 33 great towns in England and Wales, and it will be noticed that in not one of these towns was the birth rate so high as that in St. Helens. Only two of these towns had a rate over 35 per 1000 in 1897.

In Table F will be found similar statistics relative to the smaller towns, and it will be seen that here also St. Helens has the highest rate, Wigan coming next with 37·1 per 1000.

### ILLGITIMACY.

St. Helens has always had a comparatively low rate of illegitimacy, so low indeed that probably it does not influence the mortality statistics to any appreciable degree as it does in some other Districts.

Of the 3,193 births during 1897, 75 were illegitimate. This is in the proportion of 976·5 legitimate births and 23·4 illegitimate births in every 1000, or, in other words, 2·3% of the total births are illegitimate.

Year.	Legitimate.	Illegitimate.
1886	974	26
1887	971	29
1888	970	30
1889	975	25
1890	976	24
1891	974	26
1892	981	19
1893	974	26
1894	968·5	31·5
1895	975·0	24·9
1896	972·3	27·6
1897	976·5	23·4

The above figures do not include the births which occurred in Whiston Workhouse.

It is satisfactory to know that the statistics for St. Helens regarding illegitimacy compare favourably with those of any other town in England, and are below the figures for the whole of England.

MORTALITY RATE,

The deaths of 1,746 persons took place during 1897 within the Borough of St. Helens. This number is equal to an uncorrected death rate of 21·05 per 1000 of the population.

For comparative purposes certain corrections have to be applied as follows :—

I. To be deducted—	MALES.	FEMALES.	TOTAL.
(a) Deaths in Rainhill Asylum (Main Building ... .. )	51	... 47	... 98
(b) Deaths of Haydock patients at the Isolation Hospitals ... .. )	1	... 1	... 2
(c) Deaths of patients at the St. Helens Hospital who were admitted from Districts outside the Borough ... )	1	... 0	... 1
(d) Deaths at the Providence Hospital under similar conditions... .. )	1	... 0	... 1
Totals ...	54	... 48	... 102

## II. To be added—

	MALES.		FEMALES.		TOTAL.
(a) Deaths of St. Helens patients in } Whiston Workhouse Infirmary . }	58	...	31	...	89
(b) Deaths at Old Wint, Small-Pox } Hospital of patients from St. } Helens ... .. }	0	...	0	...	0
(c) Deaths at Rainhill Asylum of } patients from St. Helens ... }	6	...	4	...	10
	64	...	35	...	99

The corrected number of deaths is therefore 1,743. In the four Quarterly Reports of the Registrar General, St. Helens is debited with 1,746 deaths. The 3 deaths which are not accounted for in the above figures are deaths which occurred in other institutions outside of St. Helens, or accident cases of which your Committee has no knowledge.

The Death rate for St. Helens, with these corrections, was therefore **21·0** per 1000 of the population. This number is 0·76 per 1000 above the rate in the preceding year—*i.e.*, 1896, 20·24.

The Death rate for 1897 is however below that of the preceding 10 years by 0·97 per 1000 of the population.

The saving of life which this reduction in the Death rate of 0·97 per 1000 indicates, amounts to over 80 lives, with a corresponding saving in sickness.

On page 18 will be found the recorded Death rates for St. Helens during 28 years, and it will be noticed that on only six occasions has the yearly mortality rate been lower than in the present year.

In England and Wales the Death rate during 1897 was at the rate of 17·4 per 1000 of the population, and this rate was no less than 1·2 per 1000 below the mean rate for the 10 years 1887 to 1896.

In Tables E and F (pages 19 and 20) will be found the Mortality Statistics in other towns. In comparing these with St. Helens Statistics,—the social conditions,—the age and the sex distribution,—and the nature of the staple industries in each town should be taken into consideration.

The Death rates in each Quarter of the past five years are seen below :—

	1893	1894	1895	1896	1897
1st Quarter ...	24·8 ...	17·5 ...	19·5 ...	19·6 ...	17·0
2nd ,, ...	12·7 ...	16·8 ...	19·3 ...	19·8 ...	21·1
3rd ,, ...	26·8 ...	17·4 ...	22·9 ...	19·9 ...	23·7
4th ,, ...	19·5 ..	20·2 ...	22·4 ...	22·8 ...	22·2

The Death rates in the various Wards are shown below :—

WARDS.	Death Rate 1893.	Death Rate 1894.	Death Rate 1895.	Death Rate 1896.	Death Rate 1897.
Eccleston, North ...	24·5	19·0	22·1	19·5	20·6
Eccleston, South ...	16·8	12·5	11·7	14·5	16·7
Central ... ..	24·5	14·4	19·2	20·4	21·0
Windle, North ...	19·7	14·1	18·4	18·9	19·2
Windle, South ...	20·6	15·5	16·4	18·5	18·7
Hardshaw ‡ ...	31·0 ‡	27·5 ‡	21·9 ‡	20·7 ‡	22·4 ‡
Sutton, East † ...	20·1 †	15·2 †	17·1 †	16·9 †	16·9 †
Sutton, West * ...	39·0 *	26·8 *	36·4 *	31·8 *	33·8 *
Parr ... ..	22·7	16·6	22·3	23·1	19·6

\* Including Deaths in Rainhill Asylum (main building) and in the Fever Hospital.

† Do. do. The St. Helens Hospital.

‡ Do. do. The Providence Hospital.

The Death rates of Males and Females during the past five years are as follows :—

	Males.	Females.	Total.
1893 ...	24·4 ...	22·3 ...	23·7
1894 ...	17·8 ...	18·1 ..	18·0
1895 ...	22·0 ...	20·0 ...	21·0
1896 ...	20·8 ...	19·5 ...	20·2
1897 ...	21·3 ...	20·7 ...	21·0

## MORTALITY AT VARIOUS AGES.

In the following Table will be seen the Death Rates at each group during the years 1893-97 ; also the Mean Rate at each age.

AGES.	Death Rate per 1000 of the Population at each Age Group.					
	1893	1894	1895	1896	1897	Means
Under 1 year ...	233·4	178·4	215·4	197·8	207·2	206·4
1 to 2 years ...	98·2	59·5	79·5	69·5	83·4	78·0
2 „ 3 „ ...	32·0	17·5	20·5	29·0	31·7	26·1
3 „ 4 „ ...	15·1	10·6	9·5	20·7	21·2	15·4
4 „ 5 „ ...	12·2	9·7	9·1	10·2	14·8	11·2
5 „ 10 „ ...	5·3	4·7	5·4	6·0	5·0	5·2
10 „ 15 „ ...	4·7	2·9	3·8	2·7	1·5	3·1
15 „ 20 „ ...	4·2	3·6	4·5	3·4	2·8	3·7
20 „ 25 „ ...	6·9	6·5	5·5	5·8	5·2	5·9
25 „ 35 „ ...	9·1	7·2	8·2	8·2	8·5	8·2
35 „ 45 „ ...	12·6	11·6	14·4	14·5	11·3	12·8
45 „ 55 „ ...	23·6	20·4	21·4	21·1	26·8	22·6
55 „ 65 „ ...	51·9	35·4	35·0	38·0	32·8	38·6
65 „ 75 „ ...	75·4	71·2	79·2	74·7	78·7	75·8
75 „ 85 „ ...	95·3	112·7	167·6	138·4	138·8	130·5
Upwards of 85 years.	400·0	80·0	280·0	192·3	315·3	253·5
All under 5 years ..	83·7	59·2	71·7	69·8	76·2	72·1
All over 5 years ...	13·0	10·7	12·1	11·8	11·2	11·7
All ages ...	23·4	18·0	21·0	20·4	21·0	20·7

The causes of death at each age group and in each Ward are set out in Table D at the end of this Report.

## INFANTILE MORTALITY RATE.

This rate shows the number of deaths of children under 1 year of age per 1000 births. In 1897 it was **181**, as against 177 in the preceding year, and a mean rate of 169 in the preceding 10 years.

In England and Wales it was 156 in 1897.

Year.	INFANT MORTALITY RATE.	
	England and Wales.	St. Helens.
1885	138	168
1886	149	172
1887	145	163
1888	136	151
1889	144	177
1890	151	170
1891	149	180
1892	147	147
1893	159	196
1894	137	161
1895	161	181
1896	148	177
<b>1897</b>	<b>156</b>	<b>181</b>

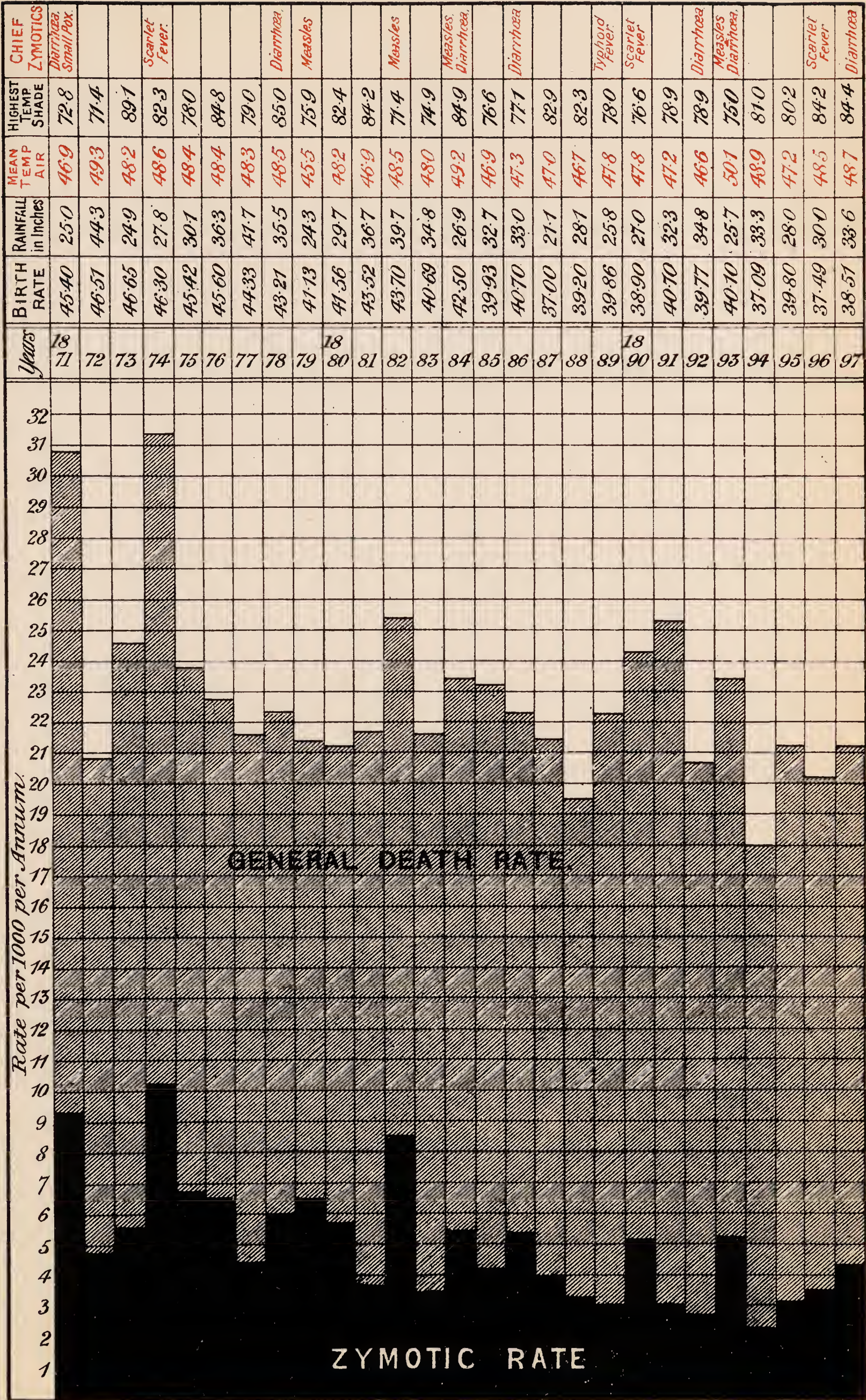
In Tables E and F the rates in other towns are indicated. It will be at once apparent on reference to these that in this respect St. Helens compares most favourably with the other towns tabulated.

TABLE SHOWING THE VITAL AND MORTAL STATISTICS FOR  
ST. HELENS DURING 28 YEARS.

YEARS.	Population.	Birth Rate.	Death Rate.	Zymotic Death Rate.	DEATHS FROM							
					Small Pox.	Measles,	Scarlet Fever.	Typhoid and Continued Fever.	Typhus Fever.	Diarrhoea.	Whooping Cough.	Diphtheria.
1870	44320	..	23·46	5·5	0	0	56	23	8	97	37	5
1871	45400	..	27·79	9·4	..	..	..	28	..	..	..	..
1872	46510	..	20·46	4·9	65	14	6	24	3	65	16	3
1873	47630	46·65	23·63	5·03	4	19	92	24	2	79	9	15
1874	48790	46·30	31·43	9·2	0	29	231	25	1	110	41	14
1875	49970	45·42	24·69	5·3	0	4	77	65	1	101	31	10
1876	51190	45·60	23·28	5·1	0	102	21	40	1	86	7	15
1877	52430	44·33	22·84	3·2	0	2	12	34	1	74	48	11
1878	53700	46·21	23·99	4·2	0	4	22	40	0	132	15	20
1879	55010	41·13	22·40	5·7	0	143	83	34	2	52	2	3
1880	56340	41·56	20·05	4·6	0	0	27	40	2	130	71	1
1881	57711	43·52	21·69	2·92	0	14	28	56	0	76	3	3
1882	58972	43·70	25·46	7·4	0	250	36	33	1	85	36	6
1883	60263	40·69	21·65	2·5	0	3	14	31	1	69	24	11
1884	61584	42·50	24·16	5·3	0	131	16	33	2	131	9	11
1885	62932	39·93	23·32	3·5	0	81	13	7	1	56	53	11
1886	64311	40·70	22·46	5·2	0	102	34	28	0	122	41	10
1887	65718	37·00	21·69	3·9	0	53	35	34	0	101	28	11
1888	67158	39·20	19·80	3·1	0	38	11	22	0	65	61	21
1889	68628	39·86	23·50	4·18	0	78	3	81	1	85	1	29
1890	70132	38·90	25·43	5·3	0	19	181	24	1	74	68	13
1891	71666	40·70	26·02	3·0	0	54	24	26	0	78	29	9
1892	73240	39·77	20·55	2·64	1	23	18	25	0	84	31	12
1893	*75390	40·10	23·46	5·3	5	135	6	52	0	168	19	16
1894	*77690	37·09	18·02	2·21	0	21	14	26	2	38	61	10
1895	*79400	39·8	21·08	3·08	1	54	9	59	0	101	14	8
1896	*81136	37·49	20·24	3·63	0	38	59	40	0	63	78	17
1897	*82910	38·51	21·0	4·22	0	87	44	33	0	133	33	20

\* These figures include Population in Area added 1893.

CHART No. 1.



FOR 27 YEARS.



TABLE E.

TABLE COMPILED FROM THE REGISTRAR GENERAL'S QUARTERLY REPORTS IN ORDER TO SHOW THE COMPARATIVE MORTALITY OF ST. HELENS WITH 33 OTHER LARGE ENGLISH TOWNS IN 1897.

TOWN.	Population	Birth Rate per 1000	Death Rate per 1000	Infantile Rate per 1000 Births	Zymotic Rate per 1000
33 Towns .. ..	10,992,524	30·7	19·0	176	2·86
London .. ..	4,463,169	30·0	18·1	158	2·59
West Ham .. ..	273,682	32·1	15·6	171	2·62
Croydon .. ..	121,171	24·9	13·0	134	1·43
Brighton .. ..	121,401	24·6	15·0	142	1·64
Portsmouth .. ..	182,585	26·8	16·1	168	2·54
Plymouth .. ..	97,658	28·4	19·0	183	2·18
Bristol .. ..	232,242	27·6	17·2	148	1·83
Cardiff .. ..	170,063	31·1	14·9	150	2·19
Swansea .. ..	100,309	29·3	15·8	139	1·36
Wolverhampton .. ..	87,287	35·0	22·0	217	4·22
Birmingham .. ..	505,772	33·3	21·5	214	3·88
Norwich .. ..	110,154	30·5	18·7	196	2·22
Leicester .. ..	203,599	30·5	17·6	205	3·14
Nottingham .. ..	232,934	28·9	18·7	205	2·81
Derby .. ..	103,291	27·0	16·0	167	1·91
Birkenhead .. ..	111,249	31·3	18·2	162	2·45
Liverpool .. ..	633,078	35·3	24·3	200	2·81
Bolton .. ..	121,433	32·5	22·4	181	4·06
Manchester .. ..	534,299	33·2	23·1	194	3·81
Salford .. ..	213,190	35·0	23·9	220	5·50
Oldham .. ..	145,845	26·0	19·2	183	2·60
Burnley .. ..	106,122	29·8	19·5	219	3·97
Blackburn .. ..	131,330	27·7	19·5	207	3·45
Preston .. ..	115,103	31·8	24·3	263	5·63
Huddersfield .. ..	101,454	23·4	16·4	130	1·49
Halifax .. ..	95,747	22·5	16·4	139	1·39
Bradford .. ..	231,260	24·6	17·4	178	2·21
Leeds .. ..	409,472	31·6	19·8	191	2·79
Sheffield .. ..	351,848	34·4	21·2	197	3·48
Hull .. ..	225,045	33·3	18·5	178	3·26
Sunderland .. ..	142,107	34·6	19·7	163	2·56
Gateshead .. ..	101,070	35·8	18·2	173	2·32
Newcastle .. ..	217,555	31·3	19·1	177	2·08
<b>St. Helens .. ..</b>	<b>82,910</b>	<b>38·5</b>	<b>21·0</b>	<b>181</b>	<b>4·22</b>

TABLE F.

TABLE SHOWING COMPARATIVE STATISTICS BETWEEN  
ST. HELENS AND OTHER SMALLER TOWNS DURING 1897.

TOWN.	Population.	Birth Rate per 1,000.	Death Rate per 1,000.	Infantile Death Rate per 1,000 Births.	Zymotic Rate per 1,000.
Southampton .. .. .	100,886	29·1	16·5	155	2·15
Reading .. .. .	68,094	26·6	14·2	148	2·10
Northampton .. .. .	66,500	26·3	15·6	184	2·4
Hanley .. .. .	59,510	35·5	20·2	202	3·0
Burton-on-Trent .. .. .	50,850	28·1	14·9	133	1·78
Walsall .. .. .	80,605	34·3	20·4	202	3·8
West Bromwich .. .. .	63,000	36·0	19·7	175	3·4
Dudley .. .. .	47,955	36·0	17·8	164	2·14
Aston Manor .. .. .	79,698	32·8	17·0	202	4·8
Coventry .. .. .	61,234	31·3	16·8	157	1·8
Grimsby .. .. .	58,450	32·4	17·8	221	·684
Stockport .. .. .	80,000	30·9	21·5	214	4·5
Bootle .. .. .	52,000	33·6	20·3	199	3·5
Wigan .. .. .	61,602	37·1	20·9	175	3·11
Warrington .. .. .	61,700	36·7	19·5	175	2·8
Bury .. .. .	60,100	25·2	18·7	176	2·89
Ashton-under-Lyne .. .. .	44,700	26·6	20·9	228	3·3
Rochdale .. .. .	74,115	25·6	17·8	139	1·80
Accrington .. .. .	42,530	24·9	16·7	187	1·85
Darwen .. .. .	37,500	29·7	17·3	163	1·6
Barrow-in-Furness .. .. .	55,570	28·2	14·5	154	1·69
York .. .. .	71,413	31·8	19·1	197	3·02
Middlesborough .. .. .	90,692	32·2	18·5	172	2·2
South Shields .. .. .	95,798	33·6	16·2	154	1·1
Carlisle .. .. .	41,700	31·7	19·4	134	1·3
Rhondda Urban District Ystradyfodwg .. .. .	121,243	33·8	16·4	206	3·03
<b>St. Helens</b> .. .. .					
	82,910	38·5	21·0	181	4·22

TABLE H.

## WEEKLY RETURNS OF BIRTHS AND DEATHS FOR 1897.

1897.		Deaths from all causes.	Annual Rate per 1000.	Deaths from seven principal Zymotics.	Annual Rate per 1000, for Zymotics.	Births.	Annual Rate per 1000, Births.
Week ending January (2 days)	2	1	·62	1	·62	(7 days) } 62	38·8
" "	9	28	17·5	1	·62	71	44·5
" "	16	30	18·8	1	·62	64	40·1
" "	23	35	21·9	0	·0	65	40·7
" "	30	31	19·4	6	3·7	54	33·8
" February	6	35	21·9	2	1·2	81	50·7
" "	13	28	17·5	3	1·8	55	34·4
" "	20	37	23·1	3	1·8	58	36·3
" "	27	26	16·3	1	·62	53	33·2
" March	6	32	21·9	3	1·8	67	42·0
" "	13	23	14·4	3	1·8	74	46·3
" "	20	22	13·7	2	1·2	57	35·7
" "	27	23	14·4	4	2·5	62	38·8
" April	3	28	17·5	6	3·7	68	42·6
" "	10	33	20·6	6	3·7	65	40·7
" "	17	38	23·8	2	1·2	60	37·6
" "	24	36	22·5	3	1·8	58	36·3
" May	1	38	23·8	6	3·7	59	36·9
" "	8	38	23·8	6	3·7	83	52·0
" "	15	28	17·5	7	4·3	50	31·3
" "	22	38	23·8	6	3·7	61	38·2
" "	29	31	19·4	7	4·3	52	32·6
" June	5	43	26·9	14	8·7	68	42·6
" "	12	33	20·6	8	5·0	47	29·4
" "	19	29	18·1	5	3·1	61	38·2
" "	26	25	15·6	6	3·7	37	23·1
" July	3	18	11·2	2	1·2	63	39·5
" "	10	27	16·9	5	3·1	61	38·2
" "	17	38	23·8	9	5·6	80	50·1
" "	24	40	25·0	14	8·7	64	40·1
" "	31	50	31·3	22	13·7	55	34·4
" August	7	50	31·3	18	11·2	52	32·6
" "	14	50	31·3	26	16·3	78	48·9
" "	21	49	30·7	24	15·0	55	34·4
" "	28	35	21·9	17	10·6	61	38·2
" September	4	32	20·0	10	6·2	54	33·8
" "	11	35	21·9	12	7·5	65	40·7
" "	18	32	20·0	7	4·3	66	41·3
" "	25	37	23·1	8	5·0	59	36·9
" October	2	33	20·6	4	2·5	63	39·5
" "	9	28	17·5	3	1·8	62	38·8
" "	16	37	23·1	7	4·3	58	36·3
" "	23	37	23·1	2	1·2	55	34·4
" "	30	28	17·5	5	3·1	58	36·3
" November	6	33	20·6	8	5·0	60	37·6
" "	13	27	16·9	8	5·0	68	42·6
" "	20	24	15·0	4	2·5	52	32·6
" "	27	39	24·4	4	2·5	68	42·6
" December	4	23	14·4	3	1·8	50	31·3
" "	11	30	18·8	3	1·8	56	35·1
" "	18	46	28·8	5	3·1	77	48·2
" "	25	32	20·0	4	2·5	61	38·2
" (6 days)	31	44	27·5	7	4·3	—	—

## CAUSES OF DEATH.

### THE ZYMOTIC DISEASES.

The mortality from the seven principal Zymotic Diseases, *i.e.* Small Pox, Measles, Scarlet Fever, Diphtheria, Whooping Cough, Fever (including Typhus, Typhoid, and Continued), and Diarrhœa, was at the rate of **4·22** per 1000 per annum during 1897.

In England and Wales the rate of mortality for this Group was 2·15 per 1000 per annum during 1897.

The Zymotic Rate of 4·22 during 1897, which was higher than in the preceding year, was made up as follows:—

		1896		1897
Small Pox	... ..	0·00	...	0·00
Measles	... ..	0·46	...	1·04
Scarlet Fever	... ..	0·72	...	0·53
Diphtheria	... ..	0·20	...	0·24
Whooping Cough	... ..	0·49	...	0·39
“Fever”	... ..	0·96	...	0·39
Diarrhœa	... ..	0·77	...	1·66
		<hr/>	...	<hr/>
Total	...	3·63	...	4·22

It will thus be apparent that the cause of this higher rate was due to the increased incidence of Measles and Diarrhœa, whilst there was a decrease in the rate from Scarlet Fever, Whooping Cough, and most markedly from “Fever.”

The following Table shows the yearly rate from Zymotic Diseases during each of the past 26 years, and also the rate for each quinquennial period. It will be seen that there is a gradual diminution taking place in the number of deaths from this group of eminently preventable Diseases.

Year.	Rate.	Year.	Rate.	Year.	Rate.	Year.	Rate.	Year.	Rate.
1872	4·9	1877	3·2	1882	7·4	1887	3·9	1892	2·64
1873	5·0	1878	4·2	1883	2·5	1888	3·1	1893	5·3
1874	9·2	1879	5·7	1884	5·3	1889	4·18	1894	2·21
1875	5·3	1880	4·6	1885	3·5	1890	5·3	1895	3·08
1876	5·1	1881	2·9	1886	5·2	1891	3·0	1896	3·6
Mean	5·9		4·1		4·7		3·8		3·3

1897    ...    ...    ...    4·22

In Tables E and F will be found the Zymotic rates for 1897 of other towns.

The relative prevalence of the diseases in this group in 1897, compared with that during the 25 years—1872-1896—is set out in the following Table.

DISEASE.	Per cent. of Zymotic Deaths.	
	25 Years. 1872-1896.	1897.
Small Pox ... ..	1·11	0·00
Measles ... ..	20·74	24·85
Scarlet Fever ... ..	15·76	12·57
Diphtheria ... ..	14·26	5·71
Fever ... ..	13·60	9·42
Whooping Cough ...	11·92	9·42
Diarrhœa ... ..	32·58	38·00
	100%	100%

It will be seen, therefore, that the relative proportion of deaths from measles and diarrhœa was somewhat in excess of the mean, whilst that from diphtheria was slightly so: on the other hand enteric fever, scarlet fever, and whooping cough were below the mean to an almost equal extent.

The Zymotic Rates during each of the 4 Quarters of the years 1891 to 1897 were as follows :—

	1st Quarter.		2nd Quarter		3rd Quarter.		4th Quarter.	
1891	...	2·5	...	2·9	...	3·2	...	3·1
1892	..	2·0	...	1·2	...	3·9	...	2·4
1893	...	6·4	...	4·2	...	10·3	...	2·0
1884	...	2·26	...	1·39	...	2·62	...	2·57
1895	...	2·00	...	1·45	...	6·06	...	2·80
1896	...	2·51	...	4·19	...	4·63	...	3·20
1897	...	1·44	...	4·00	...	8·20	...	3·23

The high rate in the 3rd Quarter corresponds to the severe outbreak of diarrhœa which occurred in July and August.

In Table D will be found certain details regarding the deaths from zymotic diseases as to age groups and localities.

The following gives the number of deaths in each Ward during the seven years 1891 to 1897.

WARDS.	Total Deaths from 7 Principal Zymotics in each year.							Persons per Acre.	Estimated Populati'n
	1891	1892	1893	1894	1895	1896	1897		
Eccleston, North ..	32	24	55	20*	33*	50*	58*	41·8	9,788
Eccleston, South ..	12	13	34	16*	19*	18*	33*	13·5	8,366
Central .. ..	23	17	47	13	36	36	32	86·7	8,503
Windle, North ..	17	9	32	14*	20*	25*	40*	13·7	9,352
Windle, South ..	22	37	50	14	20	32	33	130·7	8,889
Hardshaw .. ..	31	23	40	35	19	31	36	30·1	10,276
Sutton, East ..	21	11	23	15	17	25	21	7·1	9,272
Sutton, West (†) ..	36	24	61	26	59	32	69	3·7	8,989
Parr .. ..	28	36	60	19	22	46	28	6·4	9,475
TOTALS .. ..	222	194	402	172	245	295	350	11·4	82,910

\* Including Deaths in the Area added to these Wards in August, 1893.  
(†) Including Deaths in Fever Hospital.

SMALL POX.

For the second year in succession no case of this disease was reported.

The cases of small pox which have occurred in recent years in St. Helens are set out in the following Table.

	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897
Cases of Sickness } from Small Pox }	0	5	0	1	0	23	40	2	10	0	0
No. of Deaths ...	0	0	0	0	0	1	5	1	1	0	0

St. Helens may be considered well-equipped for dealing with any cases that may be imported in the future. As the subjoined Table shows, it is a particularly well vaccinated town, only an average of 3·8 per cent. per annum of the children born during 10 years being returned as unvaccinated, whilst even of this number a large proportion is accounted for by removals from the district.

VACCINATION.

The following Table shows the Vaccination Returns for 10 years. It compares favourably with that of other towns.

YEARLY RETURNS ON VACCINATION FOR 10 YEARS IN ST. HELENS.

YEAR	1 Births.	2 Vaccinated.	3 Insus- ceptible	4 Dead.	5 Postpon'd	6 Removed	7 Un- accounted	Percentage not Vaccinated including Columns 5, 6, 7.
1887	*2559	2118	—	331	—	105	5	4·3
1888	*2652	2226	—	316	—	105	5	4·2
1889	*2721	2279	—	319	—	112	11	4·8
1890	*2669	2190	4	369	—	99	7	3·9
1891	*2827	2345	15	386	—	71	10	2·8
1892	*2817	2424	6	318	—	61	8	2·4
1893	*2856	2370	14	370	—	95	7	3·5
†1894	*2711	2280	10	310	—	100	11	4·0
†1895	*2943	2432	17	376	2	107	14	4·1
†1896	*3006	2515	14	347	13	95	22	4·3

\* The above Returns are for St. Helens Sub-District of the Prescot Union, which does not include quite the whole of the Borough.

† The Returns in Columns 5, 6, and 7, will still further be reduced for these years.

The above figures have been supplied by Mr. Welch, Vaccination Officer for St. Helens.

MEASLES.

Measles caused 87 Deaths during the year. Comparing this number with that in former years, we obtain the following figures :—

		1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	Mean of 15 years
ST. HELENS	Tot. Deaths from Measles...	3	145	70	102	53	41	75	16	54	23	135	21	54	38	87	61
	Death Rate per 1000	·04	2·35	1·11	1·58	·80	·61	1·09	·22	·75	·31	1·8	·27	·68	·46	1·04	·87
England & Wales Death Rate ... ..		·34	·41	·52	·43	·59	·34	·50	·43	·43	·30	·30	·37	·37	·55	·40	·41

The following Table shows the periods during which Measles has been prevalent in each of the 16 years—1882 to 1897.

Year.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct	Nov.	Dec.	Total Deaths in each year
1882	16	42	80	83	10	2	7	3	2	5	0	0	250
1883	0	0	0	0	0	1	1	0	0	0	1	0	3
1884	0	0	2	3	1	0	0	0	3	16	45	75	145
1885	36	10	10	3	2	5	2	1	0	0	0	1	70
1886	3	3	1	8	3	2	16	8	3	15	29	11	102
1887	4	2	6	6	2	1	1	4	1	6	10	10	53
1888	3	0	0	0	0	0	0	0	1	3	7	27	41
1889	10	13	8	11	5	11	3	3	1	7	2	1	75
1890	0	0	0	0	0	0	0	0	0	6	5	5	16
1891	4	3	3	14	11	6	3	0	2	3	5	0	54
1892	0	0	0	1	0	0	0	1	0	1	5	15	23
1893	31	31	31	28	5	4	2	1	2	0	0	0	135
1894	0	0	1	0	0	0	0	0	0	8	11	1	21
1895	3	10	5	3	2	11	9	6	1	1	3	0	54
1896	1	3	11	10	2	1	4	2	0	2	1	1	38
1897	0	1	2	2	15	19	9	8	6	3	13	9	87
Totals...	111	118	160	172	58	63	57	37	22	76	137	156	1167

In the above Table it will be seen that certain years stand out as epidemic years, and 1897, whilst it does not reach the high figures met with in 1882, 1884, 1886, and 1893, may fairly be classed as one of these. In St. Helens, Measles is not a notifiable disease, and formerly, the only means by which information was obtained by the Health Department, was through the visits of the Sanitary Inspectors, and by notification by the School Authorities and the School Attendance Officers. During the year, however, a system of notification was introduced. The head teachers of the various Schools were supplied with post-cards \* and requested to notify the Health

\* Name of School. .... Schools.

NAME.	ADDRESS.	STANDARD.

The above are suspected cases of Measles.

Date.....189.. Signed..... Teacher.

Department of any suspected cases of measles which came to their notice. For this they were paid at the rate of threepence per actual case of measles reported. By this means 988 suspicious cases were reported, of which 582 proved to be actual cases of measles. Every case reported was visited by the Female Sanitary Inspector, and particulars obtained as to the source of infection, school attendance, etc. All children from infected houses were excluded from school attendance, and where there was clearly sufficient evidence, the school, or part of it, was closed. Instructions were also given as to the necessity for isolation, and parents were warned of the danger of exposing children suffering from the disease. By this means, there can be little doubt, many lives were saved, and the spread of the epidemic materially checked.

The cost of this system of notification has not been great, and with more extended use, much may be done to limit the number of deaths from this scourge of childhood. It may be added that the system is also advantageous to the Schools since, by means of the notices served by the Health Department to exclude scholars, a portion of the grant, which would otherwise be lost, may be recovered from the Education Department, whilst the notification fee compensates the teachers for the trouble they are put to in filling up the post cards.

The following Table shows the ages at which the deaths from measles occurred during the past seven years. From this it will be seen that measles is essentially a disease of childhood, the maximum mortality being reached in the second year of life.

AGES AT DEATH FROM MEASLES—1891 TO 1897.

				1891	1892	1893	1894	1895	1896	1897	Total.
0 to 3 months	...	...		0	1	1	1	0	0	0	3
3 „ 6 „	...	...		2	0	5	0	1	0	2	10
6 „ 12 „	...	...		8	4	32	6	8	7	22	87
1 „ 2 years	...	...		29	12	59	9	26	14	32	184
2 „ 3 „	...	...		5	3	15	2	11	11	19	66
3 „ 4 „	...	...		7	1	10	2	4	3	3	30
4 „ 5 „	...	...		3	1	6	0	1	3	6	20
5 „ 10 „	...	...		1	0	4	1	3	0	2	11
Over 10 „	...	...		0	1	3	0	0	0	1	5
Total at all Ages	...	...		55	23	135	21	54	38	87	413

The following Schools were closed during the year on account of the prevalence of measles.

I.—Sutton National Schools for three weeks, from 19th May to 9th June, 1897.

St. John's Schools, Scholes-lane, for three weeks, from 21st October to November 11th, 1897.

St. Joseph's (R.C.) Schools, Peasley Cross, for three weeks, from 14th December to 4th January, 1898.

### SCARLET FEVER.

Scarlet fever was again epidemic in St. Helens during 1897, though by reference to the following Tables it will be seen that the epidemic is gradually dying out. 914 cases of this disease were notified, of which 44 terminated fatally.

On page 18 will be found the number of deaths from scarlet fever for each year since 1870. These figures, however, indicate very imperfectly the degree of prevalence of the disease, as it is evident in St. Helens that the degree of virulence of scarlet fever varies much from year to year.

The cases of sickness and death, together with the death rates from scarlet fever during each year since the disease was notifiable are set out in the following Table.

	1890	1891	1892	1893	1894	1895	1896	1897
Cases of Sickness .. ..	1234	210	438	237	342	220	1310	914
No. of Deaths .. ..	181	24	18	6	14	9	59	44
Death Rate per 1000 ..	2·52	·33	·24	·08	·18	·11	·72	·53
Mortality per 100 Cases ..	14·6	11·4	4·1	2·5	4·0	4·0	4·5	4·8

AGE INCIDENCE.

The following Table shows the ages at which the notified cases and deaths occurred.

SCARLET FEVER NOTIFICATIONS AND DEATHS AT VARIOUS AGES.

Ages ...	MONTHS.						YEARS.										
	0-3	3-6	6-9	9-12	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-15	15-20	20 & over	Total.
Total No. of Cases } Notified ... }	1	5	6	7	52	84	109	117	113	78	62	66	36	123	27	28	914
	Under 1 year, 19				Under 5 years, 381						355						
Sickness Rate per } 1000 of the Popu- } lation at each age }	Under 1 year, 6·8		22·6	33·7	45·3	51·1	33·1						12·5	3·1	·67	11·0	
	Under 5 years, 30·5																
Deaths from Scarlet } Fever at various } ages ... }	1	0	1	0	9	7	7	5	3	2	4	2	1	2	0	0	44
Percentage Mortality .	100·0	0	16·6	0	17·5	8·3	6·4	4·2	2·6	2·5	6·4	3·0	2·7	1·6	0	0	4·8
Case Mortality ...	Under 1 year, 10·5				Under 5 years, 7·8												

**SEASONAL INCIDENCE.**

The following Table shows the periods of greatest prevalence of scarlet fever during the past 5 years in St. Helens.

Y <small>EAR</small> .	January	February	March	April	May	June	July	August	September	October	November	December	Total
1893	33	33	16	23	12	3	10	13	7	21	31	35	237
1894	16	37	61	58	39	24	17	27	16	14	12	21	342
1895	7	12	19	19	18	19	8	19	12	12	39	38	222
1896	32	53	38	41	80	87	78	105	126	249	220	201	1310
1897	123	91	118	82	70	39	40	41	68	89	78	75	914
Per centage 1893 to 1897	6·9	7·4	8·3	7·3	7·2	5·6	5·0	6·7	7·5	12·7	12·5	12·2	

It will be noted that the influence of the epidemic of 1896 was felt in the earlier months of the year; indeed, the number of notifications fell gradually from the maximum in October to the minimum in June, 1897. From this point the notifications gradually increased till a maximum was again reached in October, since which time the disease has steadily decreased.

**DISTRIBUTION OF SICKNESS CASES.**

W <small>ARDS</small> .	N <small>o</small> . of Cases of Sickness from Scarlet Fever.							
	1890	1891	1892	1893	1894	1895	1896	1897
Eccleston, North ... ..	209	48	58	32	29	12	231	188
Eccleston, South ... ..	73	14	28	35	29	19	214	90
Central ... ..	141	20	29	24	43	8	54	73
Windle, North ... ..	115	18	35	10	81	24	131	102
Windle, South ... ..	78	23	27	27	21	19	152	78
Hardshaw ... ..	186	25	43	17	46	45	163	89
Sutton, East ... ..	244	46	118	13	19	35	141	108
Sutton, West ... ..	105	9	48	35	35	25	103	90
Parr .. ..	83	7	52	44	39	35	121	96
Totals ... ..	1234	210	438	237	342	222	1310	914

It will be noted that North Eccleston had a far larger number of cases than any other Ward, and that all the Wards except the Central had fewer cases than in the preceding year.

### TYPE OF THE DISEASE.

From the Table on page 28 it will be seen that the epidemic of 1897 was not nearly so virulent as that of 1890, and was very similar to that of the preceding year. One case died in every 6·8 attacked in 1890, 1 in every 22·5 in 1896, while 1 in 20·75 died in 1897.

While the general type of the disease was a mild one, yet there occurred several cases of a most malignant type.

In this respect it must always be remembered that scarlet fever is a disease which is frequently followed by sequelæ which prove fatal long after all evidence of the scarlet fever attack has gone.

Also, that in many other cases the sequelæ cause permanent damage to health.

### NUMBER OF CASES PER HOUSE.

The 914 cases occurred in 676 houses.

In 504 houses, one case only occurred.  
 In 122 houses, two cases occurred.  
 In 39 houses, three cases occurred.  
 In 6 houses, four cases occurred.  
 In 5 houses, five cases occurred.

In the 676 houses in which the 914 cases of scarlet fever occurred in 1897, there were 1,032 children under 12 years of age, who were said not to have had the disease previously, and who did not contract it during the year.

These figures are of some value, because they confirm the experience gained in visiting cases of scarlet fever, namely, that in probably over 60 per cent. of the households attacked, reasonable care is taken to prevent diffusion of the infection, and also, that a comparatively small number of unrecognised or uncared-for cases are capable of spreading the disease widely.

### PRECAUTIONS ADOPTED TO PREVENT THE SPREAD OF SCARLET FEVER.

I.—For some years past every case of Scarlet Fever has been visited within a few hours of the receipt of the notification by the District Inspector. The object of his visit is twofold—1st, he is required to get exact information on certain points, and for this reason he fills up the following schedule:—

#### SCARLET FEVER.

.....Ward:— Notification Book No.....Page....  
 Name.....Age.....  
 Address.....  
 .....Family. ....Lodger.

Med. Atten.....	First called in.....
Notified.....	o'clock on the.....189....
Size of House.....	living rooms.....bedrooms.
Nature and Date of Isolation.....	
Nursed by .....	
Other Duties of Nurse.....	
Patient removed to Hospital at.....	o'clock,.....189....
Schoolmaster written—1st, on the.....	of.....189....
„ „ 2nd, „ .....	of.....189....
Milk and other Food Supply.....	
Library Books .....	
Business carried on in Premises .....	
Nuisances requiring removal.....	
Drains and Gullies.....	

[illegible]

Remov. Hospl.

\*A—Had Scarlet Fever.      B—Not had Scarlet Fever.      C—Now ill of Scarlet Fever.

Probable source of Infection .....

.....

.....

.....

.....

Disinfectants supplied.....

.....

Date of Fumigation.....No. of Rooms.....

Bedding, &c., sent for on the.....

TERMINATION OF CASE.... { Date of Recovery.....189....

                                    { Date of Death.....189....

CONFIRMATORY INSPECTION.. { Date of .....189....

                                    { Result .....189....

Dated.....o'clock, this.....day of.....189....

Signed.....Inspector

Whenever the information obtained in this way indicates, the Medical Officer of Health also visits the house.

II. The visit of the District Inspector has for its main object the prevention of the spread of the disease, and for this purpose he is instructed to see the person who is responsible for the nursing of the patient, and to give general verbal instructions. In order that nothing might be overlooked the following printed instructions are then read over, and a copy left at the house.

## COUNTY BOROUGH OF ST. HELENS.

### MEDICAL OFFICER'S DEPARTMENT, TOWN HALL.

#### RULES FOR PREVENTING THE SPREAD OF SCARLET FEVER.

1—Scarlatina and Scarlet Fever are two names for the same disease.

2—The danger of infection is the same in all cases, whether mild or severe. During the past six years about one out of every 10 children who suffered from Scarlet Fever were so severely affected that they died; while out of the remaining nine, one or two were more or less damaged for life.

3—All this serious danger can be avoided, and the disease prevented from spreading, by adopting the following precautions for a period of *not less than six weeks* from the appearance of the rash, or until peeling has entirely ceased.

4—**The patient must be isolated** at once in *one* room, into which *nobody* should enter except the "Doctor and the "person nursing."

5—Select for the sick room a room upstairs, and one, if possible, with a fire place.

6—All needless articles, as carpets, hangings, contents of drawers and cupboards, and everything which is not to be used in the nursing of the patient, should be removed.

7—No cups or dishes should be taken from the room, and no waste food should be eaten by any other person than the patient.

8—Motions should be received into a utensil containing either Carbolic Powder or Condyl's Fluid, and Discharges from the Nose and Mouth should be received into a piece of rag and afterwards burned.

9—Bed clothes and soiled things should be steeped in water containing Carbolic Powder (4 tablespoonsful to each gallon of water). The clothes thus steeped for 24 hours should then be boiled and washed in the ordinary way, quite separate from all other things.

10—Books and papers which have been in the sick room should be burned. No letters should be written in the sick room.

11—The person nursing should wear a loose Cotton gown over the ordinary clothes while in the sick room. The nurse on leaving the sick room should thoroughly wash her hands in water mixed with Condyl's Fluid, and also should remove the loose covering gown.

12—A sheet steeped in "Carbolic Solution" should be hung completely across the doorway outside the sick room. (Four Tablespoonfuls of Carbolic Powder in One Gallon of Water).

13—All Children from the Infected House should be kept from School (a Certificate to that effect being given by the Medical Officer of Health), also from playing or going about *with other children*. None of the household should go to Church, Chapel, or any other Public Meeting. None should go into any neighbour's house, and *no neighbours* should be allowed to visit the affected house on any account until the disinfection of the house has been thoroughly performed.

14—After the patient has quite recovered, the house should have every room thoroughly fumigated with Brimstone, ceilings whitewashed, and walls (if papered) brushed down or re-papered. Floors, woodwork, and furniture to be washed with soft soap and hot water containing Carbolic Acid Powder in solution.

15—Bedding and other articles exposed to infection should be disinfected in the disinfecting apparatus belonging to the Corporation.

16—The Fumigation and Disinfection will be done Free of Charge by the Health Department. Disinfectants will also be supplied Free of Charge.

17—No children or persons having had Scarlet Fever should return to School, or Business, or go to School, Chapel, or any other Public Meeting, or go in or upon any Public Street or Public Place whatsoever, until the house and all clothing, &c., have been thoroughly disinfected.

18—As Infection exists in the 'Peeling' of the skin, the patient must not appear on the Public Highway, or other Public Place whatsoever, until (1) the "Peeling" has entirely ceased, and (2) the house and clothing has been efficiently disinfected.

19—All children or persons returning to School or Business from the infected house should have clean clothes, washed and disinfected since the illness.

20—It is the duty of every person in whose house a case of Scarlet Fever is being treated, to remember that he or she may be responsible for giving the Fever to another person.

21—The exposure of Infectious persons or clothing in public or in any street, shop, inn, or public conveyance, is punishable under the Public Health Act, 1875, and the Penalty for such exposure will be enforced.

F. DREW HARRIS,  
Medical Officer.

N.B.—See Clause 4 of Rules for Preventing the Spread of Scarlet Fever. This is the most important of all the instructions; and greatly extended powers are given by the St. Helens Corporation Act, 1893, in dealing with cases of Scarlet Fever which are not isolated.

Isolation may be obtained in any one of the following ways:—

1st.—In your own House, by carefully carrying out the enclosed Rules.

2nd.—By hiring, temporarily, an empty house for the purpose.

3rd.—At the Borough Sanatorium, Peasley Cross. (No charge).

IV.—REMOVAL TO HOSPITAL.—It is impracticable to remove all cases of scarlet fever to hospital during an epidemic period. In St. Helens, it would be advisable to remove cases from 70 or 80 per cent. of infected houses in ordinary non-epidemic times, as in, at least, this proportion of houses efficient home isolation is either impossible or so difficult to carry out that it is not safe to rely on it. During the recent epidemic, cases were chosen for removal to Hospital on account of some special danger of spreading infection, such as those occurring in houses attached to shops, laundries, &c., or in houses where the mother was approaching her confinement; also in many cases where children had to look after themselves.

During 1897 212 cases were removed and treated in hospital, and 702 cases were treated at home.

The effect of hospital treatment, quite apart from taking away the infectious person from the household, was most beneficial to the health of the person. Notwithstanding that many cases were removed on account of their severity, the mortality at the hospital was little more than one half of that among cases treated at home.

It was as follows:—

1897—Cases treated at home—percentage mortality, 5·2.

1897—Cases treated at Sanatorium „ „ 3·3.

V.—DISINFECTION.—A supply of disinfectants is sent to every house every second or third day during the whole time that infection exists, and repeated visits are made to see that these are being properly used, and that the necessary precautions are being carried out.

Every house was disinfected at the termination of the case or after its removal to the Sanatorium. The disinfection consisted (a) in carting away all bedding, clothing, &c., which had been exposed to infection, and having these passed through a Warner's Disinfector. (b) After making the usual arrangements in the infected rooms, sulphur was burned. (c) Instructions were left that all floors, furniture, &c., should be thoroughly washed with a disinfectant.

As to the efficiency of the above means of disinfection, the following statistics have been worked out. The total number of houses in which scarlet fever occurred was 676. In some of these the house was disinfected immediately after the patient or patients were removed to hospital; in the rest of them, after the recovery of the patient or patients. In 2 houses, fresh cases occurred within 48 hours after the disinfection. Both of these may be looked upon as cases having received infection before the disinfection of the premises was done. In 4 other cases, second cases occurred at periods varying from 1 day to 6 weeks after the disinfection. That is to say—that assuming the infection in each of these cases to have been derived from imperfectly disinfected articles within the house, and not from fresh infection imported, the disinfection was more or less imperfect in less than 0·59 per cent. of the cases.

When it is remembered how exceedingly tenacious of life is the infection of scarlet fever, and how many are the ways in which it is capable of being spread, the above results are most satisfactory.

More importance ought to be attached to the washing of the furniture, floors, and paint work in infected houses. It has often been exceedingly difficult to get this done, and very often it was done in the most perfunctory manner.

VI.—All children in an infected house are kept from school for a period of at least six weeks from the commencement of the last attack, the schedules used for this purpose are as follows:—

*To the Managers*

.....*Schools,*

*St. Helens.*

No.

TOWN HALL,

ST. HELENS,

On behalf and by the Instruction of the Mayor, Aldermen, and Burgesses of the Borough of St. Helens, acting as the Sanitary Authority for the district of the said Borough, I hereby give you notice requiring you, with a view to preventing the spread of disease, to exclude from School attendance .....

.....

.....

.....

.....

.....

for a period of.....weeks from the date hereof.

Dated this.....day of.....189

.....

Medical Officer of Health.

Notice Expires.....189

Premises Disinfected ....189

Letter sent .....189

REFER TO

No.

*To the Managers*

.....*Schools,*

*St. Helens.*

GENTLEMEN,

TOWN HALL,

ST. HELENS.

Referring to my Notice, numbered as above, I beg to say that the house in question has been disinfected, and that the Children may return to School.

Yours very faithfully,

.....

Medical Officer of Health.

## HOSPITAL RETURN CASES OF SCARLET FEVER.

By this is meant those cases of scarlet fever which occur in houses after the return home of convalescent cases of scarlet fever, and which may be due to the importation of infection from the hospital.

These cases are of the greatest importance to the Sanitary Authority, as it has been decided recently that certain liabilities rest with the Authority in regard to them. Such cases occur at every hospital where scarlet fever is treated; and at the present moment there is no recognised method of reducing their number.

The Medical Officer of Health of Manchester, who has carefully investigated the subject, puts forward what appears to be the most probable explanation of return cases—namely, that a child, coming from a scarlet fever ward, carries in the nasal cavities certain infective material, notwithstanding that the peeling of the skin, and discharge from ears and nose have ceased, and that the utmost care has been taken to disinfect all clothing.

The number of cases are so small annually as not materially to militate against the use of a hospital for the isolation of cases of scarlet fever, and it is probable that some means may be found of lessening the number of such cases.

During 1897 only three cases occurred in houses within 10 days of the return of other cases from hospital—a most satisfactory result.

## CONCLUSION.

The experience of the past few years has shown that in a cottage population as in St. Helens, one of the most important means of preventing the spread of the disease is to have ample accommodation for cases during non-epidemic times.

## PROSECUTIONS.

The following prosecutions were instituted during the year for exposing infected persons or clothing:—

23rd April, 1897—A. A. Exposing child infected with scarlet fever in street. Fined 7/6 and costs.

10th September, 1897.—E. A. Exposing child infected with scarlet fever in street. Fined 5/- and costs.

## DIPHTHERIA.

The Death rate from this disease was 0·24 per 1000 of the population of St. Helens during 1897. In England and Wales it was 0·24 for the same period.

The following Tabular Statements show the deaths and cases of sickness per annum, and the distribution of the cases of sickness.

Year.	1885	1886	1887	*	1889	*	1891	1892	1893	1894	1895	*	*
				1888		1890						1896	1897
Deaths	11	10	11	21	29	13	9	12	18	9	8	17	20
Cases of Sickness	Before Notification Act.					104	69	81	79	86	66	72	66

\* Years in which Scarlet Fever was epidemic.

#### DISTRIBUTION OF CASES OF SICKNESS FROM DIPHTHERIA AND MEMBRANEOUS CROUP.

WARDS.	1890	1891	1892	1893	1894	1895	1896	1897	Total
Eccleston, North ...	8	8	14	9	7	10	6	9	71
Eccleston, South ...	9	3	3	6	8	5	1	4	39
Central ... ..	5	9	5	7	5	3	6	4	44
Windle, North ...	12	15	6	13	20	13	12	6	97
Windle, South ...	23	10	15	6	3	6	9	6	78
Hardshaw ... ..	12	4	6	16	9	10	12	14	83
Sutton, East ... ..	17	8	10	15	9	4	6	9	78
Sutton, West ... ..	8	7	12	4	10	6	10	3	60
Parr ... ..	10	5	10	3	15	9	10	11	73
Totals .. ...	104	69	81	79	86	66	72	66	653

The number of notified cases and the percentage mortality at each age group was as follows:—

Age.	Number of Cases.	Percentage Mortality.
Under 1 year ... ..	4	50%
1 and under 5 ... ..	23	56%
5 „ 10 ... ..	14	35%
10 and upwards ... ..	25	0%

## BACTERIOLOGICAL DIAGNOSIS OF DIPHTHERIA.

The work commenced in 1893 of aiding the Medical Attendant in diagnosing doubtful cases by the bacteriological examination of a piece of membrane or of a swabbing from the throat was continued during the year. It is to be hoped that a more extended use may be made of this undoubted aid to diagnosis.

With the increased accommodation now available at the Borough Sanatorium, it will be possible to isolate many of the cases of this disease.

## WHOOPING COUGH.

This Disease caused **33** deaths during the year, equal to a death rate of **0·39** per 1000, as against 0·96 per 1000 in the preceding year.

In England and Wales the rate was ·35 per 1000 during 1897.

In former years the deaths from this disease were as follows:—

1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897
24	9	53	41	28	61	15	68	29	31	18	61	14	78	<b>33</b>

The deaths were all of children under 6 years of age, and were as follows:—

0 to 3 months	...	...	...	2
3 „ 6 „	...	...	...	0
6 „ 12 „	...	...	...	5
1 „ 2 years	...	...	...	11
2 „ 3 „	...	...	...	4
3 „ 4 „	...	...	...	6
4 „ 5 „	...	...	...	4
5 „ 6 „	...	...	...	1

The cases were distributed over the Borough as follows:

Eccleston, North...	...	...	3
Eccleston, South...	...	...	1
Central ...	...	...	8
Windle, North	...	...	10
Windle, South	...	...	1
Hardshaw	...	...	6
Sutton, East	...	...	0
Sutton, West	...	...	1
Parr	...	...	3

The number of deaths in each Quarter of this highly infectious disease was as follows :

5 deaths occurred in the 1st Quarter.					
16	„	„	„	2nd	„
7	„	„	„	3rd	„
5	„	„	„	4th	„

At the present time practically nothing is done in St. Helens or in other towns to reduce the mortality and the serious damage to health which this disease causes. There are features in the natural history of the disease which render the usual preventive measures unavailable to a large extent. When children suffering from this disease are everywhere allowed to go about in public places, it is not to be wondered at that so many cases occur.

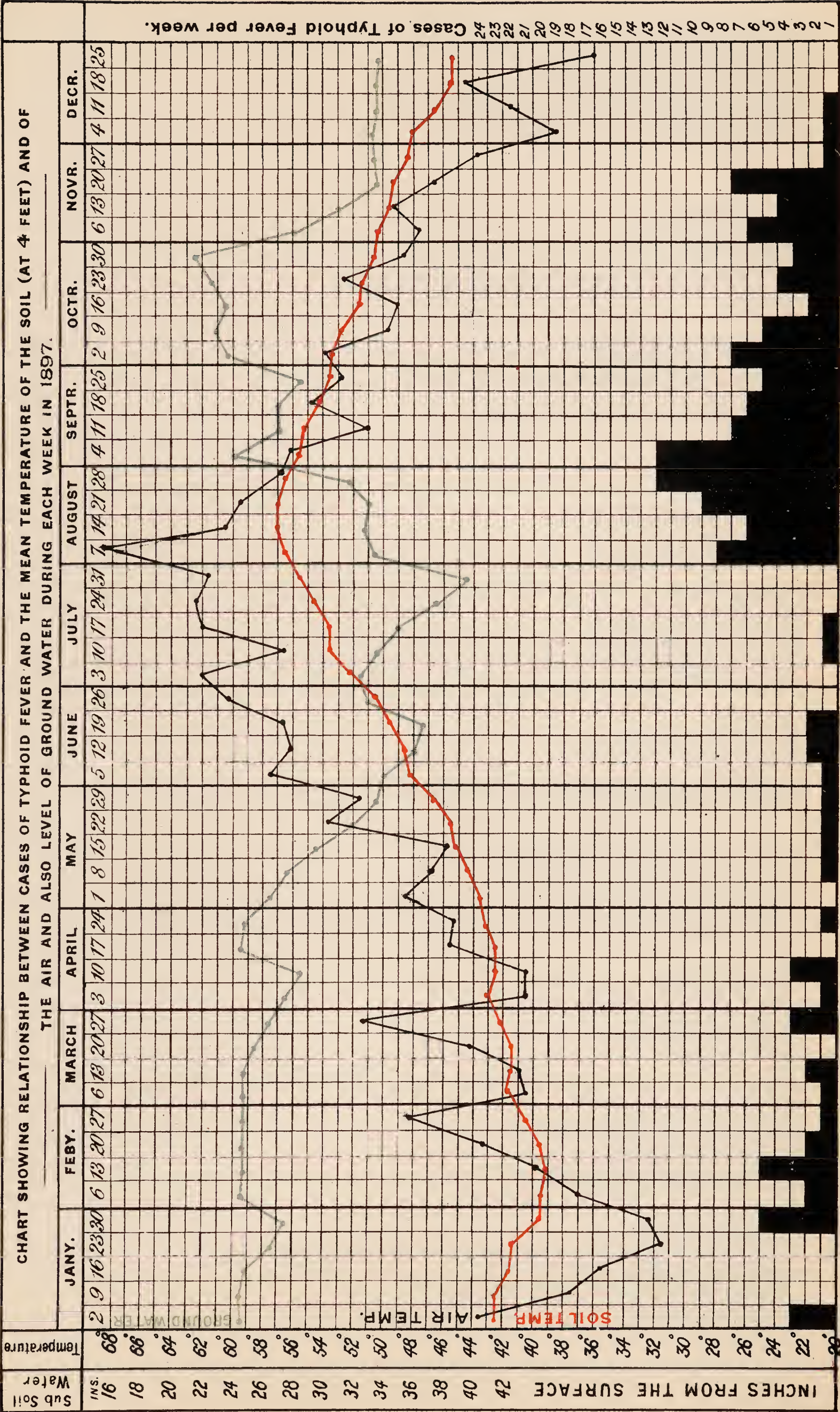
**TYPHOID FEVER.**

The death-rate from Typhoid Fever was at the rate of **0·39** per 1000, being 0·12 below the mean for the previous 10 years. In England and Wales the rate was ·15 per 1000.

The number of cases of sickness from this disease was **147**, being 19 below the number reported last year, and 85 below the mean number reported annually since 1889. As in the previous year, though the number of cases was small, the mortality was relatively large—the case mortality being at the rate of 22·4 per cent, as against 23·8 per cent in the preceding year (see Table on page 43).

The following Table shows the number of cases of sickness and the death-rates from Typhoid Fever in each year.

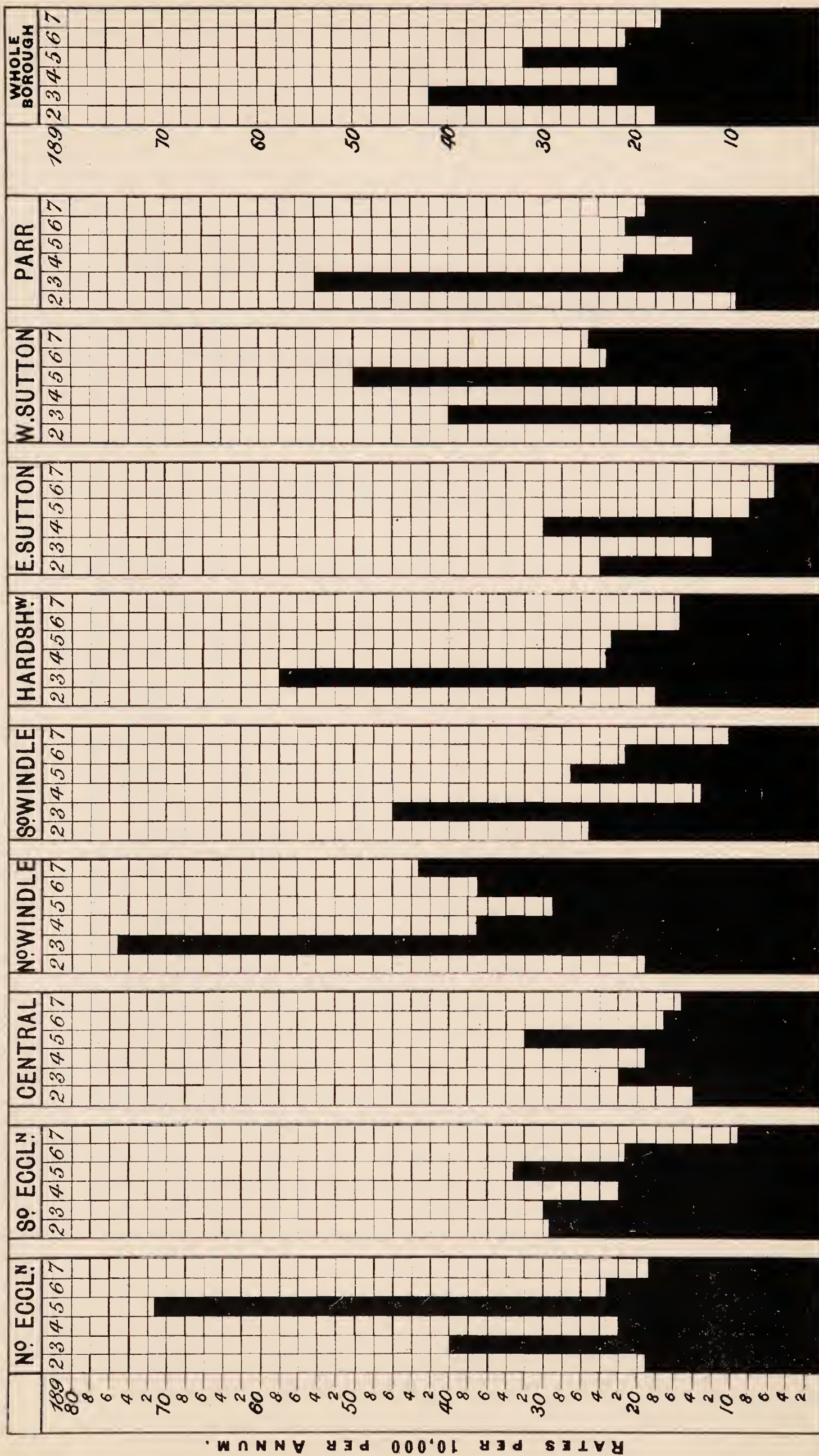
Year.	No. of Cases of Sickness.	Death Rate.	Year.	No. of Cases of Sickness.	Death Rate.
1876	No. of Cases not known.	·78	1887	No. of Cases not known	·51
1877		1·46	1888		·32
1878		·74	1889		1·18
1879		·61	1890		·34
1880		·70	1891		·36
1881		·97	1892		·34
1882		·55	1893		·68
1883		·51	1894		·33
1884		·53	1895		·74
1885		·11	1896		·49
1886		·43	1897		·39
Mean.		·67	Mean.	232	·51





**TYPHOID SICKNESS (ST. HELENS 1892 TO 1897 INCL.)**

# CHART No. 3.





The following Table shows the distribution of deaths in St. Helens during the past 13 years.

WARDS.	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	Total.
Eccleston, North	1	1	5	7	16	6	—	1	4	2	6	4	3	59
Eccleston, South	—	—	1	1	8	4	2	3	5	3	5	2	1	38
Central .....	1	5	7	3	7	3	4	1	2	2	2	3	—	41
Windle, North..	1	5	2	2	7	2	3	—	6	2	3	7	4	46
Windle, South..	—	6	3	1	15	2	1	5	2	—	3	3	—	47
Hardshaw.....	2	4	5	2	4	3	2	2	4	5	1	4	3	45
Sutton, East....	—	3	4	1	12	2	1	3	3	1	2	2	—	39
Sutton, West*..	1	1	3	3	9	2	12	6	18	10	34	10	20	134
Parr .....	1	3	4	2	3	—	1	4	8	1	3	5	2	41
Totals ....	7	28	34	22	81	24	26	25	52	26	59	40	33	490

\* Including Deaths at Fever Hospital.

As in former years the largest number of deaths occurred in the 3rd and 4th Quarters, as is seen below.

Year.	Deaths 1st Qtr.	Deaths 2nd Qtr.	Deaths 3rd Qtr.	Deaths 4th Qtr.	Total.
1890	6	4	8	6	24
1891	3	6	16	11	36
1892	5	6	6	8	25
1893	12	1	17	22	52
1894	13	2	4	7	26
1895	12	2	19	26	59
1896	4	5	15	16	40
1897	3	4	16	10	33
Totals	58	30	101	106	295

The seasonal distribution of Typhoid Fever is shown in the accompanying Table, where also the number of cases occurring in each of the months in the preceding 7 years, is set out. It will be noted that the largest number of cases occurred in the month of August.

Year.	Jan.	Feb.	Mar.	Apr	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1890	20	4	7	4	4	12	10	15	31	23	15	5	150
1891	5	5	18	17	11	3	4	31	32	30	16	13	185
1892	7	9	10	18	9	5	14	11	13	11	21	10	138
1893	10	11	18	0	3	10	26	41	73	70	34	19	315
1894	19	11	18	9	6	5	15	17	25	24	11	12	172
1895	9	9	10	2	9	9	12	37	42	43	53	22	257
1886	9	9	7	2	8	7	17	21	34	22	24	8	168
1897	6	11	7	4	5	4	2	43	27	15	18	5	147
1st Qtr. 1897				2nd Qtr. 1897			3rd Qtr. 1897			4th Qtr. 1897			
24				13			72			38			

The following Table shows the Distribution of the Notified Cases over the Borough during each year since the Infectious Diseases (Notification) Act, 1889, came into force.

WARDS.	1889	1890	1891	1892	1893	1894	1895	1896	1897	Total.
Eccleston, North...	133	22	52	17	36	21	68	22	18	389
Eccleston, South...	64	22	36	20	22	17	25	18	7	231
Central ...	46	14	9	12	19	16	27	14	13	170
Windle, North ...	46	16	11	13	51	29	26	34	40	226
Windle, South ...	67	10	26	22	40	12	24	19	9	228
Hardshaw ...	42	9	13	18	57	22	23	16	16	216
Sutton, East ...	66	14	8	19	10	26	8	5	5	161
Sutton, West ...	57	24	18	9	33	10	43	20	21	235
Parr ...	37	19	12	8	47	19	13	20	18	193
Totals ...	558	150	185	138	315	172	257	168	147	2089

The Sickness rates per 1000 of the population in each Ward for the seven years, 1891 to 1897, are set out in the following Table.

SICKNESS RATES PER 1000 OF THE POPULATION IN EACH WARD.

WARDS.	1891	1892	1893	1894	1895	1896	1897
Eccleston, North ...	6.08	1.94	4.02	2.28	7.17	2.29	1.83
Eccleston, South ...	5.42	2.91	3.09	2.29	3.37	2.19	.83
Central ...	1.09	1.45	2.29	1.92	3.24	1.68	1.52
Windle, North ...	1.68	1.96	7.57	3.74	2.97	3.71	4.27
Windle, South ...	3.08	2.59	4.67	1.39	2.78	2.18	1.01
Hardshaw ...	1.40	1.89	5.85	2.23	2.30	1.59	1.55
Sutton, East ...	1.07	2.44	1.23	3.03	.85	.55	.53
Sutton, West ...	2.18	1.08	3.93	1.18	5.03	2.27	2.44
Parr ...	1.49	.96	5.46	2.16	1.45	2.15	1.89
Whole Borough ...	2.59	1.88	4.20	2.23	3.23	2.07	1.78

It will be seen that for the second year in succession North Windle Ward shows a preponderating number of cases. By reference to the spot map appended to this report it will be noted that the cases in this ward were mainly confined to two areas.

The following Table shows the ages at which the various cases of Sickness and Deaths from Typhoid Fever occurred.

	Under 5 Yrs.	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	Over 55	Total.
Cases of Sickness ..	13	41	36	31	12	10	4	147
Deaths ..	3	5	7	11	3	3	1	33
Percentage Mortality 1897 ..	23·0	12·1	19·4	35·4	25·0	30·0	25·0	12·4
Do. 1896 ..	14·2	13·9	20·7	38·2	36·8	0·0	60·0	23·8
Do. 1895 ..	9·0	15·0	24·6	34·0	36·3	22·2	100	22·9
Do. 1894 ..	16·6	7·0	14·8	16·1	28·5	30·0	100	15·1
Do. 1893 ..	16·1	13·3	15·2	19·3	25·0	14·2	50·0	16·5

The following Rates are calculated from the Weekly Returns sent to the Local Government Board. They show the number of cases of sickness from Typhoid Fever per 1000 of the population in each of the towns.

TOWN.	No. of Cases of Typhoid Fever notified.	Sickness— Rate per 1000 of the Population.	TOWN.	No. of Cases of Typhoid Fever notified.	Sickness— Rate per 1000 of the Population.
London ...	3171	·71	Manchester ...	482	·90
West Ham ...	289	1·05	Salford ...	292	1·36
Croydon ...	51	·42	Oldham ...	85	·58
Plymouth ...	44	·45	Burnley ...	100	·94
Bristol ...	338	1·45	Blackburn ...	175	1·33
Cardiff ...	112	·65	Preston ...	109	·94
Swansea ...	92	·91	Huddersfield ...	63	·62
Wolverhampton ...	103	1·17	Halifax ...	92	·96
Birmingham ...	526	1·03	Bradford ...	144	·62
Norwich ...	237	2·15	Leeds ...	449	1·09
Leicester ...	222	1·09	Sheffield ...	677	1·92
Nottingham ...	430	1·84	Hull ...	240	1·06
Derby ...	127	1·22	Sunderland ...	206	1·44
Birkenhead...	141	1·26	Gateshead ...	158	1·56
Liverpool ...	1009	1·59	Newcastle-on-Tyne ...	140	·64
Bolton ...	126	1·03	ST. HELENS ...	147	1·77

It will be seen that the sickness rate for St. Helens was higher than 28 of the 31 towns set out above, and lower than 3, viz.: Norwich, Nottingham, and Sheffield. In 1896, St. Helens headed the list.

So large a portion of the annual report of 1896 was devoted to Enteric Fever that it is unnecessary to devote so much space to this disease in the current report. No new facts were brought to light, though the general tendency was to confirm previous inferences as to its causation, &c. Thus taking the cases for the past year, 1 case occurred in every 78 houses with privy-middens, 1 in every 113 houses with pail-closets, whilst in houses with water-closets only 1 in every 240 was found to be attacked.

Chart No. 2 is appended—as in former years—to show the weekly number of cases of Typhoid Fever, the temperature of the soil at 4 feet, and the mean temperature of the air. In the present Chart a third factor has been introduced, namely, the weekly level of the subsoil water measured in inches from the surface. It is perhaps too early to draw conclusions from these latter observations, but they undoubtedly confirm the remarks made in the report of 1896 as to the nearness of the subsoil water to the surface. Another interesting point should also be noted, namely, that the severe outbreak of Enteric Fever in August last was coincident with a rapid rise in the subsoil water after a prolonged period during which it had been very low. These observations are being continued, and it is hoped will lead to beneficial results. The Chart for 1897 again indicates a probable relationship between the temperature of the soil and the incidence of Enteric Fever.

Chart No. 3 shows the Typhoid rates for each Ward for the years 1892 to 1897, and also for the whole Borough. The variation from year to year is thus more easily appreciated.

The usual map is appended showing the distribution of the cases of Enteric Fever during 1897.

As in former years, the source of infection in a large majority of cases was not traceable to a previous case, whilst by careful enquiry it was possible to exclude both milk and water as causative agents. It seems probable therefore that, in a large number of cases, the infection was derived from the polluted and infected soil, the infective material being swallowed or inhaled along with the dust in the air.

The precautions adopted to prevent the spread of the disease were the same as in former years, namely (1) enquiry as to origin of case and the existence of insanitary conditions in the house; (2) the removal, by means of special pails, of all infective and infected material, twice or thrice weekly; (3) the supply of disinfectants twice a week, and the final disinfection of the premises; and (4) the removal of the patient, when practicable, to hospital.

The diagnosis of Enteric Fever by the serum test was extensively employed during 1897. It was often found of great value in confirming the clinical diagnosis. The extended observations made on this test during the past few months have more than justified one's earlier expectations. There seems to be little doubt that in it, one has at once a rapid and at the same time a certain means of diagnosing obscure cases of Enteric Fever.

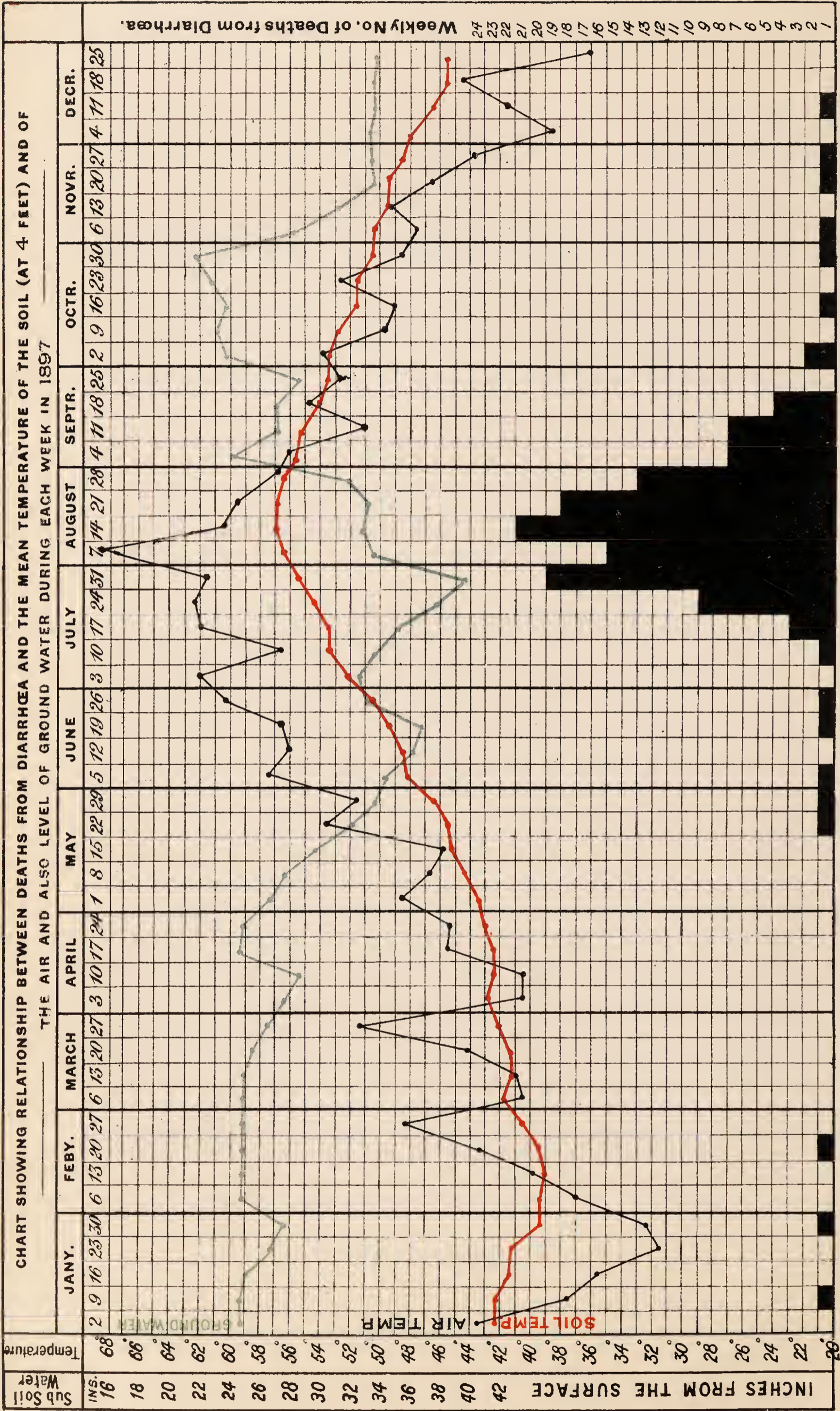
It is hoped that a still more extended use may be made of this test during the coming autumn.

## DIARRHŒA.

The death-rate from Diarrhœa in St. Helens during 1897 was at the rate of 1·60 per 1000 per annum. In England and Wales it was ·85 per 1000.



CHART No. 4.



It will be noted that this rate is the highest since 1893, and more than double that of the preceding year. The rate for England and Wales was, however, also largely increased, and it is probable that the favourable climatic conditions are mainly responsible for this increase.

The death-rates from Diarrhoea in St. Helens have fluctuated very much from year to year during the past 27 years, as will be seen in the following Table.

The form of Diarrhoea to which the statistics in this report chiefly relate is a preventable disease, and it is to be hoped that the "Directions for the Feeding of Infants," which are being distributed by the Registrar to nearly every person who registers the birth of a child, will assist in reducing the death-rate.

In the following Table are placed, side by side, certain statistics relating to Diarrhoea and Typhoid Fever, and also certain meteorological statistics.

YEAR.	Total Deaths from Diarrhoea.	Total Deaths from Typhoid and Continued Fever.	Death Rate from Diarrhoea per 1,000.	Death Rate from Typhoid & Continued Fever per 1,000.	Death Rate from Diarrhoea in England and Wales.	Mean Temperature of the Air for the year.	Rainfall at Eccleston Hill.
1870	97	23	2.18	.51	1.16	48.1	27.5
1871	89	28	1.96	.61	1.09	46.9	25.0
1872	65	24	1.39	.51	.99	49.3	44.3
1873	79	24	1.65	.50	.96	48.2	24.9
1874	110	25	2.25	.51	.92	48.6	27.8
1875	101	65	2.02	1.30	1.02	48.4	30.1
1876	86	40	1.69	.78	.91	48.4	36.3
1877	74	34	1.41	1.46	.61	48.3	41.7
1878	132	40	2.45	.74	1.00	48.5	35.5
1879	52	34	.94	.61	.45	45.5	24.3
1880	130	40	2.30	.70	1.17	48.2	29.7
1881	76	56	1.31	.97	.55	46.9	36.7
1882	85	33	2.12	.55	.65	48.5	39.7
1883	69	31	.89	.51	.59	48.0	34.8
1884	131	33	2.12	.53	.27	49.2	26.9
1885	56	7	.89	.11	.49	46.9	32.7
1886	122	28	3.01	.43	.89	47.3	33.6
1887	101	34	1.53	.51	.72	47.0	21.1
1888	65	22	.96	.32	.45	46.7	28.1
1889	85	81	1.27	1.18	.64	47.8	25.8
1890	74	24	1.05	.34	.60	47.8	27.0
1891	78	26	1.08	.36	.46	47.2	32.3
1892	84	25	1.14	.34	.50	46.6	34.8
1893	168	52	2.20	.68	.95	50.1	25.7
1894	35	26	.48	.33	.35	48.9	33.3
1895	101	59	1.27	.74	.88	47.3	28.0
1896	63	40	.77	.49	.56	48.7	31.86
1897	133	33	1.60	.39	.85	48.6	34.08

As in former years by far the larger number of deaths occurred during the 3rd Quarter, as is seen below:—

DEATHS IN ST. HELENS FROM DIARRHŒA.

	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	Mean of 10 years.
January ..	0	2	1	2	2	1	0	0	1	2	
February ...	1	0	0	1	3	0	0	0	0	1	
March ...	3	1	0	4	2	2	2	0	0	0	
1st Quarter ...	4	3	1	7	7	3	2	0	1	3	3·1
April ...	2	3	2	1	2	1	0	1	3	0	
May ...	2	2	0	2	1	5	0	1	2	2	
June ..	1	2	3	4	2	32	0	4	6	3	
2nd Quarter ...	5	7	5	7	5	38	0	6	11	5	8·9
July ...	4	28	3	4	10	71	5	29	22	13	
August ...	14	23	19	11	29	32	14	39	15	79	
September ...	24	17	26	30	25	21	7	12	9	25	
3rd Quarter ...	42	68	48	45	64	124	26	80	46	117	66·0
October ...	10	3	15	13	4	2	8	12	3	3	
November ...	3	2	4	5	3	1	1	3	1	4	
December ...	1	2	1	1	1	0	1	0	1	1	
4th Quarter ...	14	7	20	19	8	3	10	15	5	8	10·9
Total each year	65	85	74	78	84	168	38	101	63	133	88·9

The ages at death of the 133 persons who died of Diarrhœa during 1897 are shown in the following Table, as well as the similar returns for the six previous years.

AGE.	1891	1892	1893	1894	1895	1896	1897	Total.
0 to 3 months	18	14	34	8	19	7	15	115
3 „ 6 „	16	13	36	5	19	16	24	129
6 „ 12 „	20	31	41	17	26	23	46	204
1 „ 2 years	13	14	35	4	33	7	26	132
2 „ 3 „	—	4	10	—	2	2	4	22
3 „ 4 „	—	—	—	—	—	1	6	7
4 „ 5 „	—	—	1	—	1	—	1	3
Over 5 „	11	8	11	4	1	7	11	53
Totals ...	78	84	168	38	101	63	133	665

Out of the 665 persons who died during these seven years, over 87 per cent. were under 2 years of age.

The different Wards in which the cases occurred, are shown in the following Table :—

	1891	1892	1893	1894	1895	1896	1897	Total
Eccleston, North ..	13	11	32	9	18	10	23	116
Eccleston, South ...	5	6	14	4	7	5	16	57
Central ...	13	10	20	2	18	10	10	83
Windle, North ...	5	6	8	2	9	5	16	51
Windle, South ...	6	19	29	5	11	8	17	95
Hardshaw ...	9	8	12	5	11	13	16	74
Sutton, East ...	5	2	8	4	5	2	11	37
Sutton, West ...	9	11	23	3	11	5	14	76
Parr ...	13	11	22	4	11	5	10	76
Total ...	78	84	168	38	101	63	133	665

The instructions on the feeding of infants, which were printed in last year's report, were again distributed by the Registrar to each person registering the birth of a child.

Of the 133 persons who died from Diarrhœa during 1897, 14 were under 3 months and 28 between 3 and 6 months old.

Particulars were obtained as to the method of feeding these children, as follows :—

Of those under 3 months who died, 64·2 per cent. were found to have been bottle-fed infants, and 35·7 per cent. breast-fed.

Of those between 3 and 6 months old who died, 85·7 per cent. were bottle-fed and 14·2 per cent. breast-fed.

Chart No. 4 is again appended. It shows the weekly number of deaths from Diarrhœa, with the corresponding air temperature of the soil at 4 feet. For the first time the weekly levels of the subsoil water are added.

## MINOR ZYMOTICS.

### INFLUENZA.

Seventeen deaths were due to this disease in 1897. All of these, with one exception, were of persons between 25 and 75 years of age. In the previous years the deaths were—

YEAR.	1889	1890	1891	1892	1893	1894	1895	1896	1897
Deaths from Influenza ...	0	3	32	19	3	7	8	7	17

**ERYSIPELAS.**

Erysipelas caused 3 deaths among the 162 cases of sickness from this disease which were notified during the year.

The cases of sickness were distributed over the Borough as follows:—

WARDS.	1890	1891	1892	1893	1894	1895	1896	1897	Totals.
Eccleston, North ...	6	10	10	11	8	6	9	14	74
Eccleston, South ...	3	3	7	9	6	5	9	7	49
Central ...	7	6	9	12	6	3	6	17	66
Windle, North ...	4	4	4	5	12	12	15	11	67
Windle, South ...	4	8	8	10	4	3	14	19	70
Hardshaw ...	4	5	13	8	11	15	33	30	119
Sutton, East ...	6	9	6	16	12	5	18	18	90
Sutton, West ...	3	9	8	8	7	6	12	8	61
Parr ...	5	4	11	19	9	14	21	38	121
Total cases of Sickness	42	58	76	98	75	69	137	162	717
Total No. of Deaths in each year...	5	2	5	2	2	1	4	3	24

The percentage mortality was therefore 1·85% during 1897. During the previous six years it was at the rate of 3·11%.

Comparing the notified cases of Erysipelas, Scarlet Fever, and Puerperal Fever during each month of the year, the following figures are obtained.

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec	Total
Erysipelas ..	15	16	9	6	10	15	15	11	13	17	12	23	162
Scarlatina ..	123	91	118	82	70	39	40	41	68	89	78	75	914
Puerperal Fever ..	4	1	3	1	1	1	3	1	1	2	1	0	19

It has been said that the Erysipelas organism may be remotely, and perhaps very indirectly, related to that producing Scarlet Fever, it would, if such were the case, be expected that the monthly number of cases would relatively agree, but this is not found to be so.

Of the 162 cases of Erysipelas, 84 were in females and 78 in males.

In a considerable number of the cases, there was a history of one or more previous attacks of the same disease.

**PUERPERAL FEVER.**

Until some general agreement is come to as to what diseases are to be notified under the title of Puerperal Fever, the annual statistics on the subject must be misleading.

There were 19 cases notified during 1897; as compared with an average of 16·3 during the previous six years.

The following shows the notified cases and deaths during the past eight years :—

	1890	1891	1892	1893	1894	1895	1896	1897
Cases of Sickness ...	11	16	14	19	26	17	11	19
Deaths ... ..	6	15	7	10	6	9	7	10
*No. of Births to each Death ... ..	462	194	416	302	480	351	434	319

\* This does not include Still Births, Abortions, &c., which are occasionally followed by Puerperal Fever.

**BOROUGH SANATORIUM.**

During the year the Hospital has once more been largely used—263 cases having been admitted. Of these, 212 were cases of Scarlet Fever, while 51 were cases of Enteric Fever.

As in former years, very many cases had to be refused admission during the autumn, the accommodation being in no way commensurate to the demands made upon it.

During June and July of last year, it was thought advisable to close the two pavilions last erected, for painting, one at a time. Owing to this fact the number of cases admitted during the year was somewhat lower than in 1896.

The following shows the percentage of the notifiable infectious diseases treated in the Sanatorium :—

1890	...	8·4	per cent.	admitted to the Sanatorium.
1891	...	18·4	„	„
1892	...	17·1	„	„
1893	...	18·65	„	„
1894	...	22·50	„	„
1895	...	40·21	„	„
1896	...	18·3	„	„
1897	...	20·1	„	„

It will thus be seen that the percentage of admissions to notifications was somewhat better than in 1896.

The following Table gives the yearly number of admissions, &c., since the Sanatorium was opened in 1881:—

YEAR.	No. remain- ing in Sanatorium on Dec. 31st.	Number Admitted.	No. who died in Sanatorium.	Total Days in Sanatorium of Patients.	Accommodation.
1882	—	9	3	—	Rooms in Peasley Vale, used as Wards and for Ad- ministrative purposes.
1883	—	14	1	—	
1884	—	36	6	—	
1885	—	9	0	—	
1886	—	17	3	—	
1887	—	38	11	—	
1888	—	25	4	—	
1889	—	116*	15	—	Outbuildings converted into three Wards.
1890	—	128†	20	—	
1891	—	89	10	—	
1892	—	134	15	—	
1893	—	150	25	—	
1894	19	182	22	6184	2 New Pavilions used in addition to above.
1895	44	259	54	8962	
1896	46	311†	15	16630	
1897	—	263	24	12955	

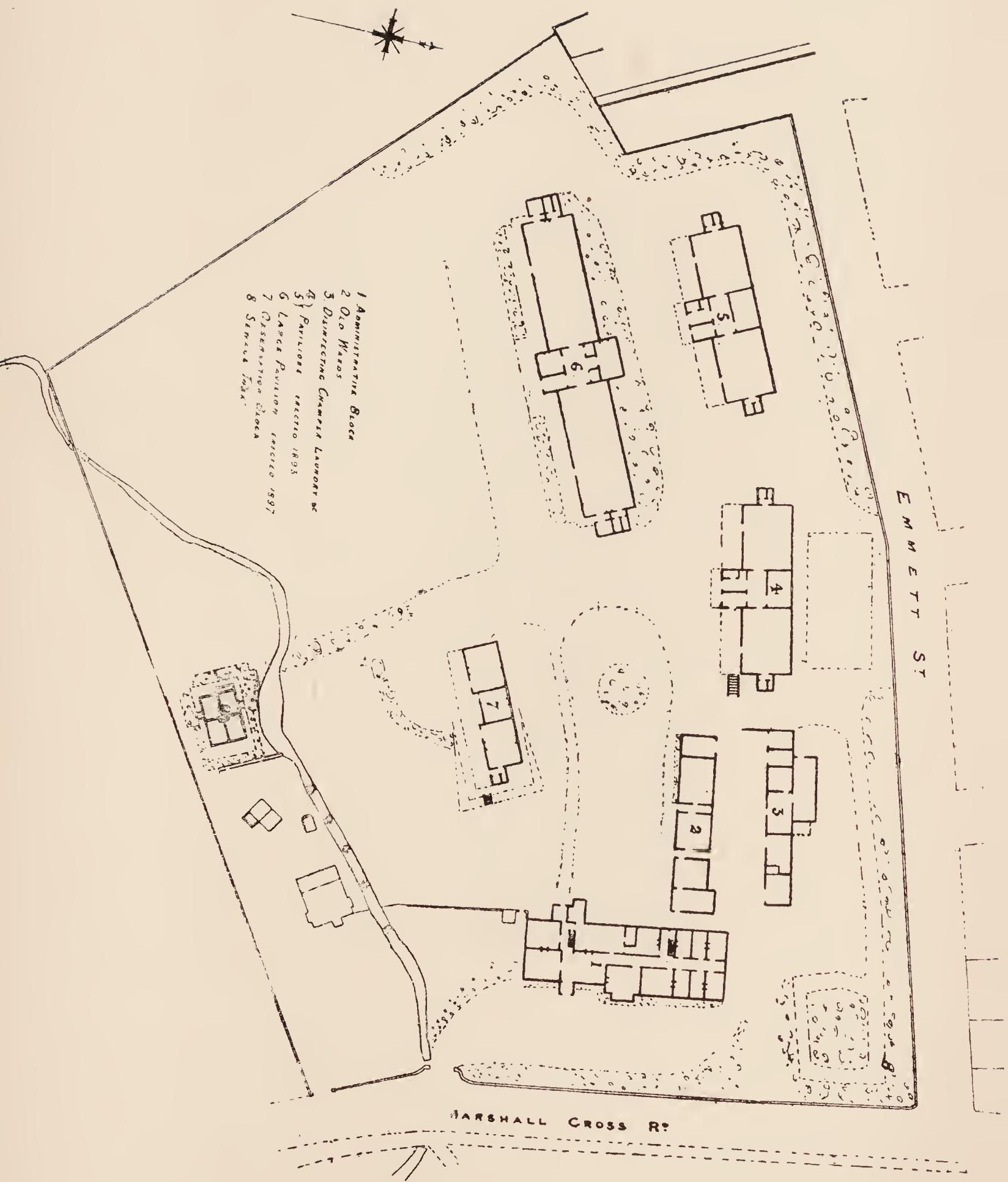
\* Enteric Fever Epidemic. † Scarlet Fever Epidemic.

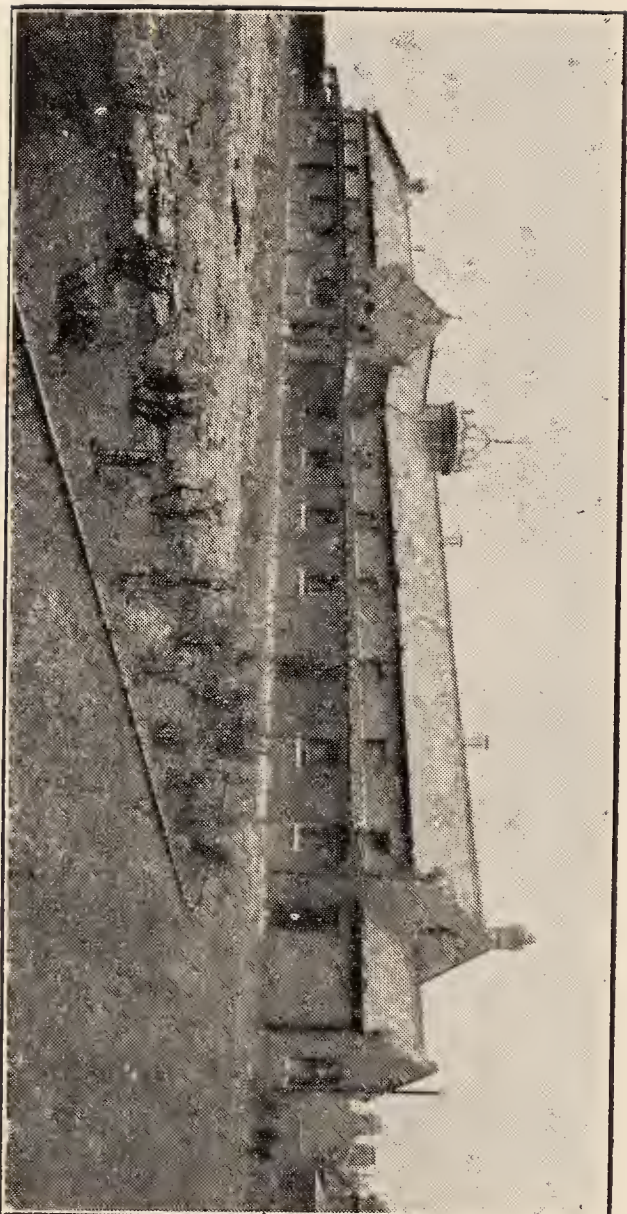
Eleven of the above 263 patients were admitted from Haydock.

Cases admitted during 1897.	Males.	Females.	Totals.	Deaths.	Average Duration of Cases in Sanatorium 1897.
Small Pox ... ..	0	0	0	0	Days 0·0
Scarlet Fever ... ..	144	98	212	7	44·1
Diphtheria ... ..	0	0	0	0	0·0
Enteric Fever ... ..	31	20	51	17	32·0
Erysipelas ... ..	0	0	0	0	0·0
Puerperal Fever ... ..	0	0	0	0	0·0
Other Diseases ... .. (including Observation Cases)	0	0	0	0	0 0
	145	118	263	24	

The following shows the number of cases of each Notifiable Infectious Disease which was treated in the Sanatorium during 1897:—

Disease.	Total Cases in Borough.	Number of such removed to Sanatorium.	Percentage of Removals to Notifications.
Small Pox ... ..	0	0	0%
Scarlet Fever ... ..	914	205	22·4%
Diphtheria, &c. ... ..	65	0	0%
Typhoid Fever ... ..	148	47	31·7%
Puerperal Fever ... ..	19	0	0%
Erysipelas ... ..	162	0	0%





LARGE PAVILION.

In March, 1897, the sanction of the Local Government Board for the borrowing of the necessary capital having been obtained, the additions to the Hospital were commenced, and the new Wards are now ready to receive patients. It may be interesting to sketch briefly the history of the Sanatorium from its commencement. Some 14 years ago the St. Helens Borough Sanatorium consisted entirely of the old house, now forming part of the administrative block. The house contained 8 rooms, and stood in nearly 4 acres of land. It was presided over by an elderly person and her daughter, who combined the duties of caretaker and nurse. Each patient was charged at the rate of 1s. per day, and the average number of patients per annum was 17. In 1886 a Matron was appointed, and at the same time a portion of the outbuildings was converted into Wards, while in 1888 the remainder of the outbuildings was turned into another Ward and a Mortuary.

In 1891 the Council decided that the Hospital should be free, and from that time the yearly number admitted has greatly increased.

In 1893 it was again considered advisable to increase the accommodation, and two pavilions, each containing two wards of 6 beds each, were added. At the same time nearly 5,000 square yards of additional land were purchased, and the whole of the land enclosed by a wall seven feet high. During this year the Disinfecting Apparatus was also added and the Laundry enlarged.

The present additions consist of one large pavilion containing two wards capable of holding 12 beds in each. An observation block consisting of two wards capable of holding 2 beds in each, and a large addition to the administrative block by means of which 15 bedrooms, nurses dining and sitting-rooms, servants' hall, storerooms, and dispensary were added.

The laundry was also again enlarged—new drying closets and ironing-room being added.

Each pavilion is provided in front with a glass verandah, the floor of which is formed of granolithic cement paving. Convalescent patients are thus enabled to sit outside in warm weather. The wards internally are plastered with cement, and all corners are carefully rounded off in order to prevent accumulation of dust.

Ventilation is provided for by means of the windows, opening at the top, and the floors of the wards consist of oak blocks. Each ward in the large pavilion is 72 feet long by 26 feet wide, giving a floor area per bed of 156 square feet, and a cubic air space of 2,000 cubic feet per patient.

Appended is a ground plan of the Hospital, showing the situation of each pavilion, and also a block of the large pavilion.

The Hospital is now capable of accommodating from 70 to 80 patients.

The total cost of the Hospital since the commencement has been £14,120. Of this amount £1,300 has been paid off out of Sinking Funds. The whole of the works since 1884 have been designed and carried out by the Borough Engineer, Mr. Geo. J. C. Broom, M.I.C.E.

### **REMOVAL OF PATIENTS AND INFECTED CLOTHING.**

No alteration in the procedure in regard to the above was made during the year.

The number of houses which required disinfection was very large; the services of the third disinfectors were temporarily retained.

The following shows the work done during the past four years.

	1894	1895	1896	1897
No. of Days on which the Disinfecting Apparatus has been used ... ..	154	136	149	149
No. of Articles Disinfected—				
Beds ... ..	428	366	791	748
Pillows ... ..	831	861	1241	1183
Blankets ... ..	1261	1791	2144	1991
Other Articles ... ..	330	366	619	1117
Clothing ... ..	1611	3643	6746	4429
Hospital Clothing ... ..	1461	1394	507	358
Books from Library and Schools...	396	83	388	90
Total ... ..	6318	8474	12436	9916
No. of Journeys of Van for Collection and Delivery ... ..	324	351	568	569
No. of Houses visited ... ..	1019	1024	1113	1861

## CLASS II.—PARASITIC DISEASES.

Four deaths from “Thrush” in children under three months old occurred during the year, against two in 1896.

## CLASS IV.—CONSTITUTIONAL DISEASES.

(a) —RHEUMATIC FEVER caused 6 deaths; against 6 in 1896, 7 in 1895, 10 in 1894, 6 in 1893, 8 in 1892, and 6 in 1891.

(b) —CANCER AND MALIGNANT DISEASES.

The following shows the deaths from this group during the years 1884 to 1897.

1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897
25	20	14	8	22	25	27	37	23	36	36	42	35	40

Cancer and Malignant new growths in any organ are included in the above figures. It is probable that the apparent increase since 1891 is due more to methods of classification, and the better recognition of obscure cases than to any real increase of the disease.

(c) —TUBERCULAR DISEASES.

Under this heading are included Tabes Mesenterica, Tubercular Meningitis, Hydrocephalus, Phthisis, and other Tubercular Diseases.

The following are the number of deaths during each of the past 7 years.

1891	1892	1893	1894	1895	1896	1897
177	160	160	164	179	179	173

The following shows the distribution of cases.

WARDS.	1891	1892	1893	1894	1895	1896	1897	Totals.	Percentage in each Ward.
Eccleston, North ...	25	18	32	16	25	14	25	155	13·0
Eccleston, South ...	9	11	15	9	8	15	12	79	6·6
Central ...	25	17	11	12	16	19	20	120	10·0
Windle, North ...	21	18	6	17	19	26	15	122	10·1
Windle, South ...	15	19	13	16	15	11	19	108	9·0
Hardshaw ...	38	22	33	24	26	25	15	183	15·3
Sutton, East ...	12	18	13	15	22	11	15	106	8·8
Sutton, West ...	19*	23*	24*	39*	33*	36*	42*	216*	18·1
Parr ...	13	14	13	16	15	22	10	103	8·6
Totals ...	177	160	160	164	179	179	173	1192	100

\* Including Deaths from Tubercular Diseases occurring in Rainhill Asylum.

The mortality from Phthisis during 1896 was at the rate of 1·44 per 1000 of the population; this being ·15 lower than the mean of the preceding 16 years.

DEATH RATES PER 1000 OF THE POPULATION FROM “PHTHISIS.”

Years.	England and Wales	County of Lancaster	St. Helens
1881	1·82	2·08	1·76
1882	1·84	2·05	1·66
1883	1·87	2·14	1·60
1884	1·81	2·04	1·92
1885	1·75	1·95	1·58
1886	1·71	1·93	1·55
1887	1·59	1·77	1·36
1888	1·54	1·69	1·44
1889	1·54	1·64	1·41
1890	1·68	1·87	1·79
1891	1·59	1·81	1·93
1892	1·46	1·64	1·52
1893	1·46	1·65	1·45
1894	1·38	1·57	1·41
1895	1·29	1·59	1·60
1896	1·30	1·46	1·50
1897	—	—	1·44
Mean ...	1·60	1·80	1·58

LOCAL DISEASES.

(a) DISEASES OF THE NERVOUS SYSTEM caused **179** deaths; against 191 in 1896, 178 in 1895, 172 in 1894, 191 in 1893, 187 in 1892, and 226 in 1891.

81 of the above 179 deaths were due to “Convulsions.” Of these cases 58 were of children under 1 year of age.

(b)—DISEASES OF THE RESPIRATORY SYSTEM caused the following number of deaths.

1891	1892	1893	1894	1895	1896	1897
568	380	390	302	344	356	<b>375</b>

The Deaths from Bronchitis and Pneumonia are set out in the following Table.

	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897
Bronchitis ...	212	170	299	210	221	177	219	232	300	243	215	154	164	171	<b>186</b>
Pneumonia...	111	104	115	83	103	87	133	172	218	141	147	118	118	154	<b>167</b>

The following figures show the distribution of cases of Bronchitis and Pneumonia over the Borough.

WARDS.	BRONCHITIS.					PNEUMONIA.				
	1893	1894	1895	1896	1897	1893	1894	1895	1896	1897
Eccleston, North ...	23	31	22	21	<b>25</b>	14	5	17	12	<b>9</b>
Eccleston, South ...	12	11	15	18	<b>17</b>	9	6	13	14	<b>12</b>
Central ...	29	15	18	22	<b>27</b>	18	13	8	12	<b>19</b>
Windle, North ...	20	10	13	16	<b>16</b>	16	11	12	9	<b>16</b>
Windle, South ...	20	16	11	16	<b>23</b>	6	8	10	17	<b>10</b>
Hardshaw ...	42	23	21	18	<b>27</b>	23	15	15	18	<b>32</b>
Sutton, East ...	28	9	13	22	<b>17</b>	28	22	24	18	<b>19</b>
Sutton, West ...	24	22	25	17	<b>14</b>	17	24	30	31	<b>34</b>
Parr ...	17	17	26	21	<b>20</b>	14	14	19	23	<b>16</b>

YEAR.	DEATH RATES FROM ALL RESPIRATORY DISEASES PER 1000.	
	England and Wales.	St. Helens.
1882	3·56	3·29
1883	3·67	5·52
1884	3·34	4·51
1885	3·73	6·72
1886	3·64	4·82
1887	3·62	5·31
1888	3·50	4·54
1889	3·30	5·37
1890	4·12	5·78
1891	4·47	7·81
1892	3·96	5·18
1893	3·60	5·17
1894	3·02	3·89
1895	3·47	4·32
1896	2·97	4·38
<b>1897</b>	—	<b>4·51</b>
Mean	3·59	5·07

(c) DISEASES OF THE DIGESTIVE SYSTEM caused **148** deaths ; against 150 in 1896, 146 in 1895, 115 in 1894, 147 in 1893, and 132 in 1892.

### SANITARY STAFF.

This consists of—

The Medical Officer of Health.

Chief Inspector of Nuisances ... } These Offices are held  
Canal Boats Inspector ... } by the Surveyor.

Three Male Assistant Nuisance Inspectors.

One Female        „        „        „

A Meat Inspector.

An Inspector under the Sale of Food and Drugs Act.

One Clerk.

Three Disinfecting Men.

### GENERAL SANITARY WORK DURING 1897.

At the fortnightly meetings of the Health Committee a report was presented dealing with the Health Statistics for the previous fortnight, and in these reports special attention was drawn to points requiring consideration.

The following special report was also submitted during the year :—

Report on the Sanitary Institute Congress at Leeds.

## WATER SOFTENING WORKS.

Samples have been taken from these works daily, and tested as to their hardness by the Medical Officer of Health. Each sample is obtained by allowing the softened water to drop for twenty-four hours into a glass vessel. At the end of this time the contents are well mixed, and the sample taken. In this way a true sample is obtained.

The average hardness of unsoftened water was 19·2.

						No. of Samples Tested.	Mean Hardness.
January	...	...	28	...	...	13·6°	
February	...	...	28	...	...	13·2°	
March	...	...	31	...	...	13·5°	
April	...	...	30	...	...	13·6°	
May	...	...	29	...	...	12·8°	
June	...	...	30	...	...	13·2°	
July	...	...	29	...	...	12·3°	
August	...	...	31	...	...	12·9°	
September	...	...	30	...	...	12·8°	
October	...	...	25	...	...	14·7°	
November	...	...	18	...	...	13·9°	
December	...	...	31	...	...	9·9°	
			<hr/>			<hr/>	
			340	Mean for year		13·0°	

## MILK SUPPLIES.

It is hardly necessary to again insist on the importance of clean milk supplies from a public health point of view; and it is satisfactory to note that the milk trade of St. Helens has been carried on with more care than in former years. No case of Infectious Disease was traceable to a milk supply.

The total number of Cowkeepers on the Register in St. Helens during 1897 was **55**, while the total amount of accommodation in the shippens belonging to them was for **324** cows. The number of persons registered as purveyors of milk, exclusive of cowkeepers, was **113**, and while many of the premises belonging to these are hardly as satisfactory as might be desired, much has been done to place them in a clean and sanitary state. **20** new premises were registered during the year, namely, **6** as Cowkeepers and **14** as Purveyors of Milk.

Before leaving this subject it would be well to insist on the necessity of abundant air space for the cows while in the shippen. The minimum space permitted in St. Helens is 800 cubic feet. Without sufficient air space the risk of Tubercular Disease in the cows is very great, while the danger arising from the ingestion of milk from a tubercular cow is well known. It is to be feared that in the case of much of the milk imported into the town from outlying districts this minimum air space is often not provided.

## PROPERTY UNFIT FOR HUMAN HABITATION.

The following is a list of houses which have been closed by order of the Sanitary Authority during 1897 (under Bye-law No. 93 with regard to Buildings).

March 9	...	70, Victoria-street	} Closed
April 14	...	1, Sots-hole	
" "	...	3, "	} Dilapidated Property Pulled down.
" "	...	5, "	
" "	...	7, "	
" "	...	9, "	
" "	...	1, Derbyshire Hill-road	} Closed
July 28	...	4, Garden-street	} Closed
" "	...	8, "	

## CANAL BOATS ACTS.

The following is a copy of the Annual Report of the Inspector under this Act to the Local Government Board:—

In compliance with section 3 of the Canal Boats Act, 1884, I have to present to you my Annual Report as to the execution of the Canal Boats Acts, 1877 and 1884, for the year ending 31st December, 1897.

(1) The Corporation of St. Helens have appointed me to be Inspector under the Canal Boats Acts, in addition to my duties as Borough Surveyor and Chief Inspector of Nuisances. No special remuneration is made for my duties under the Canal Boats Acts.

(2) The number of boats inspected in 1897 was 25, against 20 in 1896.

(3) None of the boats inspected were found to contravene any Section of the Acts, nor was it necessary to take any legal proceedings or other steps to secure compliance with the Acts or Regulations.

(4) No case of Infectious Disease was discovered on any Canal Boat during the year, nor was any case reported to the Medical Officer of Health.

(5) No Canal Boats were detained for cleansing or disinfection.

(6) No boats are at present on the Register.

(7) No boat was registered during 1897.

I herewith append a table showing the foregoing facts.

I am, gentlemen,

Your obedient servant,

GEO. J. C. BROOM,

Canal Boats Inspector for the County Borough  
of St. Helens, Registration Authority.

## BLACK SMOKE NUISANCE.

Seven chimneys were "timed" during 1897 for periods lasting from a few minutes to over an hour.

It was considered by the Health Committee that if Black Smoke issued from any chimney for a longer period than five minutes at one time, that a nuisance that was preventable was thereby caused.

Of the 7 observations taken, in 2 Black Smoke was sent out for over five minutes—the longest time being  $6\frac{1}{2}$  minutes.

In each of these 2 cases the works were communicated with and a reply obtained as to the cause, and an assurance obtained that means were being taken to prevent such from happening again.

The small number of observations during 1897 was due to the time of the Inspectors being largely occupied with Infectious Cases.

### SWINE FEVER.

The prevalence of this disease has no very direct bearing on the public health, but from the fact that so many pigstyes exist, even in populous areas in St. Helens, it is not uninteresting to note the number of outbreaks from year to year. Again the destruction of the affected animal in the Refuse Destructor at Parr, and the cleansing of the premises, have been carried out by the Health Committee.

The number of outbreaks reported in each of the seven years is as follows :—

1891	1892	1893	1894	1895	1896	1897
57	23	48	10	27	33	27

### OFFENSIVE TRADES.

The following offensive trades are on the register :—

Tripe Boilers	...	...	...	...	...	...	9
Gut Scrapers	...	...	...	...	...	...	1
Manure Manufacturers	...	...	...	...	...	...	2
Soap Boilers	...	...	...	...	...	...	1
Fat Boilers	...	...	...	...	...	...	1
Total...	...	...	...	...	...	...	14

### COMMON LODGING HOUSES.

There are 17 Registered Common Lodging Houses in St. Helens, against 16 in the previous year. These contain 88 Registered Sleeping Rooms, having beds for 331 adults and 6 children.

These have been inspected regularly during the day by the Nuisance Inspectors, and at night by the Police.

### SLAUGHTER HOUSES.

There were on December 31st 14 Licensed Private Slaughter Houses, together with the Public Abattoir and 1 Knacker's Premises.

The Licenses of 7 of the above Slaughter Houses have been renewed for one year.

The following figures show the number of Cattle Beasts killed in the Corporation Slaughter House and in the rest of the Borough :—

	Corporation Slaughter House.			In other Slaughter Houses.		
1889	...	...	117	...	...	2470
1890	...	...	276	...	...	2429
1891	...	...	995	..	...	2714
1892	...	...	959	...	...	2959
1893	...	...	1321*	...	...	2859
1894	...	...	1203*	...	...	2847
1895	...	...	1226	...	...	2026
1896	...	...	1763	...	...	1634
<b>1897</b>	...	...	<b>1973</b>	...	...	<b>879</b>

\* Owing to want of accommodation, butchers had to kill elsewhere who would have killed here.

The following gives the number of Animals Slaughtered in St. Helens during 1897 and seven preceding years :—

ANIMALS KILLED.	1890	1891	1892	1893	1894	1895	1896	1897
No. of Beasts killed within the Borough in public and private slaughter houses for market purposes ...	2705	3709	3918	4180	4050	3252	3397	2852
„ Sheep ...	5322	4078	4385	5365	4485	3648	3420	4487
„ Calves ...	306	371	369	1281	588	471	459	427
„ Pigs ...	1304	774	872	772	3410	3348	7038	6384
Total ...	9638	9932	9544	11598	12533	11332	15314	14150
Beasts killed in the Corporation slaughter house, which are included in the above number	276	995	959	1321	1203	1226	*6520	6520

\* Including Sheep, Pigs, &c.

Meat and other Articles seized or given up on account of being Unfit for Human Food, during year ending December 31st, 1897.

Butchers' Meat	...	...	570 score 3 lbs.
Fish (various)	...	...	8 tons 11 cwts. 28 lbs.
Haddocks	...	...	67 boxes
Kippers	...	...	60 boxes
Herrings	...	...	6 boxes
Viscera...	...	...	23 sets lungs, &c.
Rabbits	...	...	24
Game Birds	...	...	42
Mackerel	...	...	22 boxes
Mussels and Cockles	...	...	33 bags
Turkeys	...	...	13
Geese	...	...	11

The following prosecution was instituted for an offence during the year:—

1—A man for exposing diseased meat for sale. Fined £10 and costs.

### REPORT OF PUBLIC ANALYST FOR YEAR 1897.

The following Table shows the work done by the Public Analyst during the year 1897.

Name of Sample Analysed.	Number of Samples Analysed.	Number of such Samples which were found to be genuine.	Number of such Samples which were found to be adulterated.	No. of Cases in which a Summons was taken out.
New Milk ...	69	58	11	11 } 9 fined 1 dismissed 1 no action
Vinegar ...	6	6	—	
Whiskey ...	6	6	—	
Butter ...	36	36	—	—
Margarine ...	1	1	—	—
Cheese ...	5	5	—	—
Lard ...	2	2	—	—
Tea ...	2	2	—	—
Coffee ...	2	2	—	—
Pepper ...	4	4	—	—
Totals...	133	122	11	11

APPENDED IS A TABLE SHOWING THE NUMBER OF SAMPLES SUBMITTED FOR ANALYSIS SINCE 1889, THE NUMBER OF SUCH SAMPLES WHICH WERE ADULTERATED, AND THE PERCENTAGES OF ADULTERATED SAMPLES DURING THE YEAR.

Articles Purchased.	1889		1890		1891		1892		1893		1894		1895		1896		1897	
	Total Samples	No. Adul-terated	Total Samples	No. Adul-terated	Total Samples	No. Adul-terated	Total Samples	No. Adul-terated	Total Samples	No. Adul-terated	Total Samples	No. Adul-terated	Total Samples	No. Adul-terated	Total Samples	No. Adul-terated	Total Samples	No. Adul-terated
Milk ...	24	4	33	1	30	3	23	2	23	2	25	2	82	8	82	4	69	11
Separated Milk ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
Whiskey ...	19	5	8	1	11	3	9	1	—	—	12	3	6	1	6	—	6	—
Butter ...	9	2	14	—	15	3	23	—	6	1	12	2	30	—	30	3	36	—
Margarine ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Bread ...	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—
Cream of Tartar ...	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Coffee ...	1	—	1	—	1	—	1	—	—	—	—	—	—	—	—	—	2	—
Cheese ...	1	—	1	—	—	—	—	—	—	—	—	—	1	—	2	—	5	—
Vinegar ...	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6	—
Cocoa ...	2	—	—	—	7	—	—	—	—	—	—	—	3	—	6	—	—	—
Lard ...	2	—	3	—	—	—	1	—	—	—	—	—	—	—	2	—	2	—
Pepper ...	—	—	2	—	—	—	1	—	—	—	—	—	—	—	2	—	4	—
Beer ...	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—
Mustard ...	—	—	—	—	—	—	1	—	—	—	—	—	—	—	2	—	—	—
Paregoric ...	—	—	—	—	—	—	—	—	—	—	—	—	3	—	—	—	—	—
Tincture of Opium ...	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
Spirits of Nitre ...	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—
Tea ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—
Totals ...	62	11	62	2	64	9	61	3	29	3	49	7	128	9	133	7	133	11
Percentage of Adulterated Samples—St. Helens	17·7		3·2		14·0		4·9		10·3		14·3		7·03		5·26		8·27	
Percentage of Adulterated Samples—All England	11·5		11·2		12·2		12·4		12·9		10·3		9·3		9·0		—	
Average Amount of Fine in each Case, exclusive of Costs—	s. d. 7 11 <sup>5</sup> / <sub>11</sub>	s. d. 7 6	s. d. 7 6	s. d. 10 0	s. d. 12 9 <sup>1</sup> / <sub>3</sub>	s. d. 10 0	s. d. 10 0	s. d. 7 6	s. d. 4 7 <sup>5</sup> / <sub>7</sub>	s. d. 12 2 <sup>2</sup> / <sub>3</sub>	s. d. 1 5 8 <sup>4</sup> / <sub>7</sub>	s. d. 1 5 8 <sup>4</sup> / <sub>7</sub>	s. d. 12 2 <sup>2</sup> / <sub>3</sub>	s. d. 1 5 8 <sup>4</sup> / <sub>7</sub>	s. d. 2 12 5	s. d. 2 12 5	s. d. 2 12 5	s. d. 2 12 5
St. Helens..	£1 7 4	£1 9 0	£1 9 0	£1 11 3	£1 11 3	£1 16 2	£1 17 11	£1 15 7	£1 15 7	£1 15 9	£1 10 9	£1 10 9	£1 15 9	£1 10 9	£1 10 9	£1 10 9	£1 10 9	£1 10 9
England and Wales..																		

## BAKEHOUSES.

198 Bakehouses were in use during the year, and each of these has been inspected on more than one occasion.

2 New Bakehouses were erected during the year, and in each of these cases the Health Committee insisted that the bakehouse should not be used as a scullery or washhouse as well as a bakehouse.

## WORKSHOPS.

The number of Registered Workshops on December 31st, 1897, was **316**. These were visited, but owing to the large number of Scarlet Fever cases as much attention could not be given to these as could be desired.

## NUISANCE INSPECTORS' WORK DURING 1897.

Systematic house-to-house inspections have been carried on during the year by the Assistant Nuisance Inspectors, and the following table gives a list of the numbers of cases in which nuisances were found, and for which notices had to be served:—

### SANITARY NOTICES.

No. of Sanitary Notices served:—	1890	1891	1892	1893	1894	1895	1896	1897
To Clean Choked Drains .. .. .	298	276	357	447	353	303	230	291
„ Repair or Relay Defective Drains .. ..	49	26	48	57	86	63	66	87
„ Repair Backyards .. .. .	89	239	291	252	193	94	69	128
„ Clean Backyards, Privies, and Passages ..	..	54	11	46	72	30	18	21
„ Provide Doors to Privies, Pail Closets, and Ashpits .. .. .	40	157	179	59	306	258	170	239
„ Repair or Re-hang Doors to Pail Closets, Ashpits, and Privies .. .. .	..	42	49	92	2	..	..	141
„ Repair Privies and Ashpits .. .. .	..	..	..	..	96	21	8	1
„ „ Eaves and Downspouts .. .. .	..	11	39	93	126	182	75	134
„ Provide „ „ .. .. .	..	..	37	14	83	..	42	22
„ Disconnect Downspouts .. .. .	..	29	2	..	..	..	8	19
„ „ or Lengthen W.P. to Slopstones ..	17	101	148	144	133	55	52	49
„ Provide W.P. to Slopstones .. .. .	..	..	..	..	..	..	..	12
„ „ Slopstones .. .. .	..	..	..	28	61	13	4	19
„ Repair W.C.s, Baths, Basins, & Lavatories ..	..	..	..	43	11	18	2	26
„ „ Roofs of Dwelling-houses and Privies ..	15	150	115	142	272	258	108	129
„ Drain Dwelling-houses, etc... .. .	..	..	..	17	2	25	7	5
„ Cleanse and Limewash Filthy Dwellings ..	..	..	..	..	18	42	31	27
„ Remove Fowls, Pigeons, etc., from Dwellings ..	..	..	..	..	..	11	12	6
„ „ Pigs .. .. .	2	21	14	39	37	27	28	17
„ „ Rubbish .. .. .	..	..	17	16	18	25	18	15
„ „ Manure .. .. .	42	..	16	5	29	15	17	24
„ Clean Foul Ditches and Cesspools .. .. .	..	1	2	5	11	29	14	22
„ Provide Ashboxes .. .. .	..	..	..	..	194	179	340	32
„ Overcrowding.. .. .	27	..	37	26	56	153	33	31
„ Remedy Defects in Bakehouses .. .. .	..	..	..	..	..	..	..	10
„ „ „ Cowsheds and Dairies.. .. .	..	..	..	..	..	..	8	12
„ Miscellaneous.. .. .	245	323	487	436	237	231	215	164
Foul Ashpits to be Reconstructed to W.C's ..	..	..	..	..	..	..	..	218
„ „ „ No. 2 System and Tub & Pail System }	435	117	192	196	487	39	..	13
	1259	1560	2041	2157	2820	2065	1579	1914

## REMOVAL OF EXCRETA.

Prior to 1884 all houses, with few exceptions, were on the privy midden system. Since 1884 the number of houses put on the Tub and Pail System are detailed in the accompanying table, which has been further brought up to date by the inclusion of the number of water closets added during the year :—

	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	Total
New Houses Tub and Pail..	..	97	180	352	307	338	349	275	221	268	347	277	175	104	4	3294
Converted Privies to Tub and Pail.	..	161	526	380	328	415	602	435	117	192	196	487	358	14	21	4190
Old System ..	49	..	..	..	..	..	..	..	..	..	..	..	..	..	..	49
New Houses, No. 2 System	..	..	..	..	..	..	..	..	..	..	..	..	..	..	49	49
New Houses, Water Closets	..	Total number of	Water	Closets	..	..	..	..	..	up	to	1896	=	1450	142	1592
Converted Privies to Water Closets	..	..	..	..	..	..	..	..	..	..	..	..	..	..	66	66
Tub and Pail to Water Closets	..	..	..	..	..	..	..	..	..	..	..	..	..	..	21	21

The above Table thus shews the number of Water Closets in the whole Borough to be **1679**; Tubs and Pails, **7484**; and No. 2 System, **98**.

To these must be added 2852 privy middens which still exist.

WEEKLY RECORD OF METEOROLOGICAL CONDITIONS  
TAKEN AT VICTORIA PARK.

WEEK ENDING		Barometer.	Maximum Temp.	Minimum Temp.	Mean Temp	Mean Soil Temp. (4 feet.)	Rainfall (total in.)	WIND. Number of days in each direction.								
								N	NE	E	SE	S	SW	W	NW	Calm
January	2 ..	29.888	55.6	27.4	43.4	42.2	1.492	..	..	..	1	..	3	1	2	..
"	9 ..	29.759	42.9	31.0	37.9	42.1	.555	..	..	3	3	..	1	..	..	..
"	16 ..	29.822	42.2	28.0	35.8	41.9	.07	..	2	..	3	..	1	..	1	..
"	23 ..	29.910	39.5	22.2	31.8	41.5	.065	3	2	1	..	..	..	..	1	..
"	30 ..	29.650	39.2	21.4	32.1	39.7	.54	..	..	..	2	..	..	..	5	..
February	6 ..	29.407	38.7	31.0	37.0	39.7	1.515	..	..	6	..	..	1	..	..	..
"	13 ..	29.939	49.5	33.1	39.9	39.3	.185	1	1	1	3	..	..	..	1	..
"	20 ..	30.155	52.5	30.1	43.3	39.5	.44	..	..	..	1	..	2	1	2	1
"	27 ..	30.198	52.2	38.5	48.1	40.4	.415	..	..	..	..	1	1	4	1	..
March	6 ..	29.415	46.9	31.1	40.1	41.7	.735	..	..	..	2	..	2	..	3	..
"	13 ..	29.715	49.4	31.3	41.0	41.6	.395	..	..	..	4	..	1	2	..	..
"	20 ..	29.362	54.8	36.0	44.1	41.5	.355	..	..	1	2	1	1	2	..	..
"	27 ..	29.697	59.8	45.8	51.3	42.0	.19	..	..	..	..	1	2	1	3	..
April	3 ..	29.293	52.1	30.0	40.3	42.9	.55	..	1	..	1	..	1	..	4	..
"	10 ..	29.781	52.2	28.2	40.5	42.6	.31	..	..	1	3	1	1	..	1	..
"	17 ..	29.701	57.8	33.3	45.6	42.7	.82	..	..	..	2	1	2	1	1	..
"	24 ..	29.998	52.9	36.8	45.5	43.1	.78	..	..	3	1	..	1	..	2	..
May	1 ..	29.831	61.8	37.2	48.7	43.7	.15	..	..	1	1	..	1	1	1	2
"	8 ..	29.861	55.9	36.0	46.9	44.5	.445	..	..	..	..	..	1	2	4	..
"	15 ..	30.050	55.6	31.4	45.8	45.2	.08	..	1	..	1	..	..	1	4	..
"	22 ..	30.142	69.7	37.2	53.8	45.6	.0	..	1	6	..	..	..	..	..	..
"	29 ..	29.546	66.4	35.6	51.2	46.9	.89	..	1	1	2	..	2	..	1	..
June	5 ..	29.948	69.6	47.4	57.4	48.1	1.08	..	1	..	..	..	2	1	3	..
"	12 ..	30.156	72.5	44.1	56.0	48.8	.31	..	1	2	1	..	2	..	1	..
"	19 ..	29.813	80.8	42.7	56.7	49.7	1.445	..	..	..	1	..	1	..	5	..
"	26 ..	29.948	81.8	46.9	60.3	50.7	.555	..	..	..	3	..	1	1	2	..
July	3 ..	29.967	74.8	52.0	62.0	52.1	.55	..	..	1	2	..	..	..	4	..
"	10 ..	29.855	65.0	45.5	56.5	53.4	.61	..	..	..	..	..	..	3	4	..
"	17 ..	30.134	76.8	46.4	62.0	53.8	.0	..	2	2	1	..	1	..	1	..
"	24 ..	29.866	81.2	50.2	62.3	54.9	.13	..	1	..	3	..	1	..	2	..
"	31 ..	29.998	78.1	51.0	61.7	55.7	.50	..	..	..	1	..	1	..	5	..
August	7 ..	29.936	84.8	52.5	68.7	56.4	3.00	..	..	..	3	..	3	..	1	..
"	14 ..	29.791	71.5	49.5	60.1	57.0	.76	..	..	..	1	1	3	..	2	..
"	21 ..	29.584	69.4	49.0	59.8	57.0	1.05	..	..	..	..	..	4	..	3	..
"	28 ..	29.597	67.5	44.5	56.9	56.4	.56	..	2	..	1	..	2	..	2	..
September	4 ..	29.562	67.2	42.5	56.0	55.8	1.660	..	..	..	..	..	4	..	3	..
"	11 ..	29.960	60.2	34.8	51.0	55.1	1.04	..	1	2	1	..	1	1	1	..
"	18 ..	30.112	64.6	37.4	54.3	54.1	.49	..	..	..	1	..	..	..	6	..
"	25 ..	29.737	64.7	38.2	52.9	53.6	.27	..	..	..	..	..	4	..	3	..
October	2 ..	29.940	64.5	39.5	53.8	53.1	.90	..	..	..	..	4	2	..	1	..
"	9 ..	30.224	58.5	39.5	49.8	52.7	.61	..	1	..	3	..	1	..	2	..
"	16 ..	29.660	59.8	37.0	49.0	51.8	1.26	..	2	..	1	..	2	..	2	..
"	23 ..	30.190	63.6	38.8	52.7	51.4	.10	..	..	..	4	..	3	..	..	..
"	30 ..	30.123	61.0	36.2	48.7	50.8	.02	..	..	1	6	..	..	..	..	..
November	6 ..	30.237	59.5	38.4	47.7	50.2	.0	..	2	..	5	..	..	..	..	..
"	13 ..	29.961	59.4	42.2	49.5	49.6	.75	..	..	..	6	..	1	..	..	..
"	20 ..	30.065	58.4	31.2	46.5	49.3	.74	..	..	..	1	1	1	2	2	..
"	27 ..	30.301	54.6	34.2	43.8	48.8	.43	..	..	2	1	..	4	..	..	..
December	4 ..	29.675	53.4	28.2	38.3	48.0	2.19	..	..	..	..	..	2	1	4	..
"	11 ..	29.451	39.8	35.0	41.4	46.4	2.12	..	..	..	2	..	3	..	2	..
"	18 ..	29.552	57.2	31.2	44.8	45.5	.57	..	..	1	2	..	4	..	..	..
"	25 ..	30.324	45.2	28.3	36.0	45.3	.00	..	..	..	7	..	..	..	..	..
TOTALS .....							34.677	4	22	35	89	11	77	25	98	3
Means .....		29.861	59.8	37.4	48.6	48.8										

# RAINFALL

AT ECCLESTON HILL WATERWORKS FOR 30 YEARS.

	1868	1869	1870	1871	1872	1873	1874	1875	1876	1877
January ..	2·38	1·78	2·40	·50	*	2·54	2·78	*	1·70	1·70
February ..	1·91	3·12	·60	·84	*	·27	·62	*	3·60	4·50
March ..	3·41	1·47	1·94	·84	4·69	1·46	2·02	·63	2·34	2·43
April ..	1·94	2·31	1·47	2·42	2·91	1·88	1·01	·34	3·25	3·13
May ..	1·74	4·04	1·07	1·45	1·27	1·85	1·44	2·30	·42	2·69
June ..	·36	1·28	1·47	2·84	5·56	1·69	·96	3·80	2·61	1·07
July ..	·47	1·18	·81	4·07	7·46	3·53	2·65	3·26	2·74	5·32
August ..	4·47	2·27	1·96	1·53	2·72	3·01	3·24	3·35	3·50	6·16
September ..	2·01	6·49	2·99	2·93	7·03	1·52	2·43	5·65	3·96	3·01
October ..	4·40	3·07	7·31	4·81	5·40	4·24	4·26	5·81	2·90	3·46
November ..	2·15	3·61	2·76	1·08	2·73	2·31	4·50	4·10	4·96	2·50
December ..	7·08	3·13	2·79	·02	3·97	·88	1·51	·78	4·38	2·90
Totals ..	32·32	33·75	27·59	23·33	43·77	25·18	27·42	30·02	36·36	38·87

\* Gauge broken.

	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887
January ..	3·54	*	·49	·08	2·72	2·58	3·51	1·78	3·99	0·98
February ..	1·77	*	·80	4·17	1·73	3·38	2·33	2·35	0·80	0·61
March ..	1·13	1·42	1·37	2·41	2·15	·53	2·49	1·94	1·84	1·33
April ..	2·20	1·14	·66	1·23	4·06	1·09	1·07	1·38	1·12	1·06
May ..	4·34	1·58	1·90	3·35	1·71	·68	0·82	2·14	4·25	2·03
June ..	3·32	3·10	2·15	2·60	6·07	2·90	2·11	3·32	1·68	0·91
July ..	1·40	4·53	5·82	3·47	5·27	3·32	3·30	1·91	3·03	1·17
August ..	4·87	5·15	2·38	6·60	4·41	2·25	2·02	1·98	1·74	1·50
September ..	5·06	3·77	2·90	2·46	3·10	6·41	3·09	4·58	3·47	5·36
October ..	3·94	2·07	3·13	3·14	3·00	5·81	1·49	5·99	4·05	2·37
November ..	3·94	·64	2·03	2·91	3·43	2·60	1·57	3·18	3·04	1·17
December ..	*	·61	6·16	4·30	2·12	1·65	3·12	2·18	4·00	2·61
Totals ..	35·51	24·37	29·79	36·72	39·77	33·20	26·92	32·73	33·01	21·10

\* Gauge broken.

	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897
January ..	0·93	0·65	3·17	1·01	1·80	0·89	1·87	2·06	1·13	1·11
February ..	0·61	1·53	0·19	0·08	1·54	3·07	4·02	0·04*	1·54	2·35
March ..	1·89	1·27	2·28	0·76	0·73	0·77	2·21	0·89	2·94	2·09
April ..	1·09	1·92	1·31	1·95	1·15	0·39	1·59	1·74	1·48	2·27
May ..	0·66	2·47	1·58	2·13	3·36	1·30	2·48	0·54	0·51	1·33
June ..	2·54	0·35	2·27	3·39	4·08	1·74	2·23	0·82	3·83	3·52
July ..	6·87	2·98	2·43	3·26	3·20	3·32	3·66	3·72	1·92	1·15
August ..	3·31	4·75	3·67	6·50	4·15	2·79	4·77	3·31	3·18	4·88
September ..	1·56	2·25	1·48	2·92	3·80	3·85	0·72	1·17	6·28	4·90
October ..	1·85	2·84	2·09	3·49	6·25	2·18	3·79	5·13	3·18	1·88
November ..	4·98	2·49	6·41	2·92	2·44	1·88	2·56	2·65	1·31	4·61
December ..	1·89	2·39	0·14	3·93	1·96	3·55	3·44	2·88	4·56	3·99
Totals ..	28·18	25·89	27·02	32·34	34·84	25·73	33·34	25·35	31·86	34·08

\* Rain Gauge out of order.

## APPENDIX A.

Showing the work done during 1897 in the erection of Buildings and the Paving and Sewering of Streets and Passages.

This information is supplied by

MR. GEO. J. C. BROOM, M.I.C.E.

### Plans Deposited and Approved by the Health Committee.

	1890	1891	1892	1893	1894	1895	1896	1897
For Dwelling-houses...	285 ...	238 ...	401 ...	563 ...	310 ...	253 ...	310 ...	329
„ Other Buildings...	90 ...	66 ...	47 ...	35 ...	45 ...	24 ...	31 ...	26
„ Alteration to Existing Buildings ...	<div style="display: flex; align-items: center;"> <div style="font-size: 3em; margin-right: 10px;">}</div> <div> 47 ... 49 ... 29 ... 59 ... 73 ... 48 ... 44 ... 40 </div> </div>							
Total	... 422 ...	353 ...	477 ...	657 ...	438 ...	325 ...	385 ...	395

The following table shows the several Wards of the Borough in which Buildings have been erected during the years mentioned:—

Year.	North Eccleston	South Eccleston	North Windle	South Windle	East Sutton	West Sutton	Central	Hardshaw	Parr	Total
1895	22	49	49	4	5	32	—	16	24	202
1896	15	63	57	12	6	36	—	12	43	244
1897	16	28	65	5	15	15	—	7	44	195

## STREETS.

### Sewering, Levelling, Paving, Flagging, Macadamizing, and Channelling.

Moxon-street.

### Sewering, Levelling, Paving, Flagging, and Channelling.

Cambridge-road  
Harris-street  
Spray-street  
Charles-street  
Talbot-street

Devon-street (extension)  
Hanover-street  
Tamworth-street  
Drake-street

### Draining, Levelling, Paving, Flagging, and Channelling.

Parade-street

### Sewering.

Proposed Street, gable end of No. 58, Parr Stocks-road

## PASSAGES.

### Draining, Levelling, Paving, and Channelling.

Passage between Cairne-street, and Balmer-street  
,, behind Nos. 96 to 136, Hanover-street

### Sewering, Levelling, Flagging, and Channelling.

Passage rear of Green-street, Water-street, and Brook-street

### Sewering, Levelling, Paving, Flagging, and Channelling.

Passage in rear of Nos. 12 to 40, Greenfield-road, and along gables of Nos. 19, Windleshaw-road, and 12, Greenfield-road.

### Sewering, Levelling, Paving, and Channelling.

Passage behind Nos. 13 to 25, Higher Parr-street  
,, rear of Denton's Green-lane, Harris-street, and Lingholme-road  
,, ,, Nos. 211 to 243, Park-road  
,, ,, North-road, from Ward-street to Crab-street  
,, ,, Nos. 6 to 26, and along gable end of No. 4, Ward-street  
,, ,, Ward-street and North-road  
,, ,, Nos. 3 and 5, Wilfred-street, and Nos. 6 to 14, Duke-street  
,, ,, Nos. 40 to 86, Parr Stocks-road  
,, between Speakman-road, Windleshaw-road, Hard-lane, and Hammill-street  
,, ,, Speakman-road and Windleshaw-road, from Hammill-street to Carr-street  
,, ,, Speakman-road and Windleshaw-road, from Carr-street to Tennis-street  
,, ,, Windleshaw-road, Greenfield-road, Hard-lane, and Hammill-street  
,, ,, Windleshaw-road and Greenfield-road, from Hammill-street to Carr-street  
,, ,, Windleshaw-road and Greenfield-road, from Carr-street to Tennis-street  
,, ,, Windleshaw-road and Greenfield-road, from Tennis-street to Rivington-street

Passage between Greenfield-road and Denton's Green-lane, from Hammill-street to Carr-street	
„ „ Greenfield-road and Denton's Green-lane, from Carr-street to Tennis-street	
„ „ Greenfield-road and Denton's Green-lane, from Tennis-street to Rivington-street	
„ „ Greenfield-road and Denton's Green-lane, from Rivington-street to Greenfield-road	

## PUBLIC HIGHWAYS.

### Granite Paving.

Barrow-street  
Ormskirk-street  
Water-street

### Passages declared Public Highways during the year 1897.

Passage behind Nos. 29 to 39, Hardshaw-street, and No. 55, Corporation-street	
„ between Nos. 14 and 16, Cloughton-street	
„ „ Barton-street, Randon-street, Lowe-street, and Talbot-street	
„ „ Westfield-street, Raglan-street, Kirkland-street, and the Brook	
„ behind Nos. 2 to 18, Fox-street	
„ „ Nos. 101 to 109, College-street, and Nos. 1 to 3, Peel-street	
„ „ Nos. 1 to 17, Bewsey-street	
„ „ Nos. 10 to 24, Park-road, and Nos. 131 to 139, Higher Parr street	
„ „ Nos. 3 to 9, Ward-street, and Nos. 37 and 39, College-street	
„ „ No. 96, Duke-street, and No. 105, Crab-street	
„ „ Nos. 52 to 62, Traverse-street, and Nos. 3 to 21 South John-street	
„ „ Nos. 113 to 121, Peasley Cross-lane	
„ between New Cross-street and Rigby-street	
„ behind Nos. 2 to 12, York-place	
„ along gable end of No. 43, Raglan-street	
„ between Nos. 3 and 5 Cloughton-street	
„ behind Nos. 17 to 23, Hall-street	
„ „ Nos. 9 to 17, Westfield-street	
„ „ Nos. 3 to 13, Fisher-street	
„ „ Nos. 86 to 92, Albion-street	
„ „ Nos. 65 to 71, Duke-street	
„ along the gable of the "Angel Inn," Barrow-street	
„ between Fir-street and Springfield-row	
„ „ Junction-lane, Pecker's-hill-road, and Prescott-street	
„ behind Nos. 35 to 91, Junction-lane	
„ in rear of Green-street, Water-street, and Brook-street	
„ „ Denton's Green-lane, Harris-street, and Lingholme-road	
„ „ Nos. 211 to 243, Park-road	
„ „ Cairne-street and Balmer-street	
„ „ Nos. 96 to 136, Hanover-street	
„ „ North-road, from Ward-street to Crab street	
„ „ Nos. 2 to 26, and along gable of No. 4, Ward-street	
„ „ Ward-street and North-road	
„ „ Nos. 3 to 5, Wilfred-street, and Nos. 6 to 14, Duke-street	
„ „ Nos. 60 to 70, Campbell-street	
„ „ Prescott-road and Thompson-street	
„ „ Nos. 2 to 28, West-street, and Nos. 21 to 39, Bewsey-street	
„ „ Nos. 13 to 25, Higher Parr-street	
„ „ Nos. 3 to 37, Randon-street	

### Courts declared Public Highways.

Barber's-court  
Court adjoining No. 15, Pocket Nook-street

### **Streets declared Public Highways.**

Wolseley-road, from Cowley-hill-lane to Wynne-street  
 Prospect-road, from Park-road to a point 187 feet S E of Park-road  
 Fir-street, from Beech-street to a point 60 feet N.W. of Springfield-street  
 Windleshaw-road, from Denton's Green-lane to Hard-lane  
 Greenfield-road, from Denton's Green-lane to Hard-lane  
 Rivington-street, from Denton's Green-lane to Windleshaw-road  
 Hammill-street, from Denton's Green-lane to Speakman-road  
 Tennis-street, from Denton's Green-lane to Windleshaw-road  
 Carr-street, from Denton's Green-lane to Speakman-road  
 Parade-street, from Hardshaw-street to Hall-street

Table D.

MORTALITY STATISTICS for Year ending December 31st, 1897, showing Age at Death, and Ward.

DISEASES.	AGES AT DEATH.													WARDS.														
	0 to 3 ms	3 to 6 ms	6 to 12 ms	1 to 2 yrs	2 to 3 yrs	3 to 4 yrs	4 to 5 yrs	5 to 10 yrs	10 to 15 yrs	15 to 20 yrs	20 to 25 yrs	25 to 35 yrs	35 to 45 yrs	45 to 55 yrs	55 to 65 yrs	65 to 75 yrs	75 to 85 yrs	Upwards of 85 years	Ecceleston North	Ecceleston South	Central	Windle North	Windle South	Hardshaw	Sutton East	Sutton West	Parr	Whole Borough
<b>Zymotic Diseases</b>																												
(a) MIASMATIC DISEASES																												
Small Pox ..	..	2	22	32	19	3	6	2	1	..	..	..	..	..	..	..	..	..	15	9	11	7	6	4	4	23	8	87
Measles ..	..	1	1	9	7	5	12	2	2	..	..	..	..	..	..	..	..	10	10	3	3	2	6	4	3	10	2	44
Scarlet Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	8	2	1	6	3	1	2	33
Typhus Fever ..	..	..	5	11	4	6	4	1	..	..	..	..	..	..	..	..	..	3	1	8	10	1	1	6	3	1	3	20
Whooping Cough ..	..	..	1	6	2	2	3	5	..	..	..	..	..	..	..	..	..	4	2	..	1	3	3	3	3	1	3	2
Diphtheria ..	..	..	1	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	3	2	..	1	..	..	..	..	2	33
Simple, Continued, or Ill-Defined Fever.	..	..	..	2	..	..	1	3	2	2	5	11	3	3	1	..	..	..	3	1	..	4	..	..	..	20	2	17
Enteric Fever ..	..	..	..	2	..	..	1	..	..	..	..	3	3	3	2	..	..	..	2	2	..	5	3	2	1	..	2	33
Influenza ..	..	..	..	..	..	..	1	..	..	..	..	3	3	5	2	..	..	..	2	2	..	5	3	2	1	..	2	17
Other Miasmatic Diseases	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(b) DIARRHOEAL DISEASES																												
Simple Cholera ..	..	15	24	46	26	4	6	1	1	..	1	..	..	3	2	3	1	..	23	16	10	16	17	16	11	14	10	133
Diarrhoea ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dysentery ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(c) MALARIAL DISEASES																												
Remittent Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ague ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(d) ZOOGENOUS DISEASES																												
Cow Pox and Effects of Vaccination ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hydrophobia, Glanders, & Splenic Fever.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

TABLE D.—CONTINUED

[illegible]

TABLE D.—CONTINUED.

DISEASES.	AGES AT DEATH.															WARDS.								
	0 to 3 ms	3 to 6 ms	6 to 12 ms	1 to 2 yrs	2 to 3 yrs	3 to 4 yrs	4 to 5 yrs	5 to 10 yrs	10 to 15 yrs	15 to 20 yrs	20 to 25 yrs	25 to 35 yrs	35 to 45 yrs	45 to 55 yrs	55 to 65 yrs	65 to 75 yrs	75 to 85 yrs	Upwards of 85 years.						
<b>Developmental Diseases</b>																								
Premature Birth .. ..	47	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..						
Congenital Malformation ..	7	..	1	..	..	..	..	..	..	..	..	..	..	..	..	20	..	..						
Old Age .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	22	4	..						
<b>Local Diseases</b>																								
(a) NERVOUS DISEASES																								
1. Inflammation of Brain or Membranes.	..	4	2	4	1	4	..	4	1	1	..	1	1	..	1	..	6	..						
2. Apoplexy, Softening of Brain	..	..	..	..	..	..	..	..	..	..	1	6	13	9	9	1	1	..						
3. Insanity.. ..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..						
4. Epilepsy .. ..	..	..	..	..	..	..	..	2	..	..	..	..	1	..	..	..	..	..						
5. Convulsions .. ..	40	7	11	15	5	..	..	2	..	..	1	..	..	..	..	..	..	15						
6. Laryngismus St. .. ..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..						
7. Diseases of Spinal Cord, P. A. and Paraplegia .. ..	..	..	..	..	..	..	..	..	..	..	2	..	1	1	..	1	..	..						
8. Other Diseases of Nervous System ..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..						
(b) DISEASES OF SPECIAL SENSE																								
Eye, Ear, and Nose .. ..	..	..	1	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..						
(c) DISEASES OF RESPIRATORY SYSTEM																								
Laryngitis .. ..	2	..	3	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..						
Croup .. ..	..	..	..	2	1	..	1	..	..	..	..	..	..	..	..	..	..	..						
Emphysema and Asthma ..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..						
Bronchitis .. ..	14	12	27	22	4	3	2	..	..	1	2	1	8	23	25	29	10	3						
Pneumonia.. ..	7	9	20	26	13	10	6	4	1	1	4	12	11	22	10	11	..	..						
Pleurisy .. ..	..	..	1	..	..	..	..	..	..	1	1	..	..	1	1	..	..	..						
Other Respiratory Diseases ..	..	..	..	1	..	..	..	..	..	..	..	..	3	1	..	1	..	..						

TABLE D.—CONTINUED.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
(d) DISEASES OF CIRCULATORY SYSTEM																												
Pericarditis .. ..	..	..	..	..	..	..	..	..	..	..	.	..	1	1	..	..	1	..	..	..	..	..	..	..	..	..	..	0
Endocarditis acute ..	..	..	..	..	..	..	..	..	..	..	2	4	4	8	12	6	4	..	..	3	4	6	..	..	4	6	1	3
Valvular Diseases of Heart ..	..	..	..	1	..	..	..	1	2	..	..	..	4	4	3	5	2	..	..	3	1	4	2	3	2	3	5	44
Other Diseases of Heart ..	3	..	..	..	..	..	..	..	..	2	..	..	4	4	..	1	..	..	..	..	1	..	..	..	..	..	..	23
Aneurism .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Embolism or Thrombosis ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Other Diseases of Blood Vessels ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(e) DISEASES OF DIGESTIVE SYSTEM																												
Dentition .. ..	..	..	2	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1	1	..	1	1	1	2	..	8
Sore Throat, Quinsey ..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	2
Diseases of Stomach ..	..	8	2	4	..	..	1	..	..	..	..	1	..	3	1	1	..	..	2	1	..	1	1	1	2	3	13	24
Enteritis .. ..	19	19	19	13	2	1	..	1	..	..	1	1	..	..	2	2	2	..	9	6	3	9	9	5	8	19	13	81
Obstruction Diseases of Intestines ..	..	..	..	..	..	1	..	..	..	..	1	1	..	2	1	1	..	..	1	..	..	2	..	3	2	..	..	7
Peritonitis .. ..	..	..	..	..	..	..	..	1	..	2	..	3	..	..	..	..	..	..	1	1	..	1	..	1	2	..	..	6
Ascites .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cirrhoses of Liver ..	..	..	..	..	..	..	..	..	..	..	..	..	2	3	4	..	..	..	..	1	1	1	..	..	4	1	1	9
Jaundice and other Diseases of Liver ..	1	..	..	..	..	..	..	..	..	..	..	2	1	3	2	1	..	..	..	..	..	..	4	4	2	..	..	10
Other Diseases of Digestive System ..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1
(f) DISEASES OF LYMPHATIC SYSTEM																												
Lymphatics, &c. .. ..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	1	..	1	..	..	..	2
(g) DISEASES OF OTHER GLANDS																												
Bronchocele .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Addison's Disease.. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(h) DISEASES OF URINARY SYSTEM																												
Nephritis .. ..	..	..	..	..	1	..	..	1	1	..	..	1	2	3	2	2	..	..	2	..	1	2	1	4	..	2	1	13
Bright's Diseases, Albuminuria ..	..	..	..	..	..	..	..	..	..	..	..	4	3	4	2	..	1	..	1	3	2	3	..	..	1	3	1	14
Disease of Bladder and Prostate ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Other Diseases of Urinary System ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	1

TABLE D.—CONTINUED.

DISEASES.	AGES AT DEATH.																	WARDS.									
																		Ecceleston North	Ecceleston South	Central	Windle North	Windle South	Hardshaw	Sutton East	Sutton West	Parr	Whole Borough
	0 to 3 ms	3 to 6 ms	6 to 12 ms	1 to 2 yrs	2 to 3 yrs	3 to 4 yrs	4 to 5 yrs	5 to 10 yrs	10 to 15 yrs	15 to 20 yrs	20 to 25 yrs	25 to 35 yrs	35 to 45 yrs	45 to 55 yrs	55 to 65 yrs	65 to 75 yrs	75 to 85 yrs	Upwards of 85 years									
(i) DISEASES OF REPRODUCTION SYSTEM																											
Of Male Organs ..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Of Female Organs ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Abortion and Miscarriage ..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Puerperal Convulsions ..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	1	2	10
Placenta Praevia ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Accidents of Childbirth ..	1	..	..	..	..	..	..	..	1	2	5	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(k) DISEASES OF BONES AND JOINTS																											
Caries and Necrosis ..	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	1	..	..	..	..	..	2
Arthritis, Ostitis, Periostitis ..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Other Diseases of Bones and Joints ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(l) DISEASES OF INTEGUMENTS																											
Carbuncle, Phlegmon ..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	3
Other Diseases of Integumentary System	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Deaths from Violence																											
(a) ACCIDENT OR NEGLIGENCE																											
Fractures and Contusions ..	..	..	..	..	..	1	..	1	3	2	2	4	2	2	2	2	1	1	1	6	6	5	22	..	..	..	..
Gunshot Wounds ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cuts or Stabs ..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	5	..	3	15	..	..	..	..
Burns or Scalds ..	..	..	..	1	3	3	2	3	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Poison ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Drowning ..	..	..	..	..	..	..	..	1	1	..	1	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Suffocation (Gassed)	1	..	..	..	..	..	..	..	..	..	1	1	1	..	..	..	..	..	..	..	1	2	5	3	..	..	..
Otherwise ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

TABLE D.—CONTINUED.

[illegible]

TABLE A.

Table of Deaths during the year 1897, in the Urban Sanitary District of St. Helens, Lancashire, Classified according to Diseases, Ages & Localities.

MORTALITY FROM ALL CAUSES AT SUBJOINED AGES.											MORTALITY FROM SUBJOINED CAUSES DISTINGUISHING DEATHS OF CHILDREN UNDER FIVE YEARS OF AGE.														
WARDS. (a)	(b)									(c)		(d)		(e)		(f)		(g)		(h)		(i)			
	At all Ages.	Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)										
Eccleston, North ..	202	75	59	7	9	43	9	202	75	59	7	9	43	9	Under 5 5 upwds.										
Eccleston, South ..	140	53	31	7	6	32	11	140	53	31	7	6	32	11	Under 5 5 upwds.										
Central ..	179	54	40	9	1	54	21	179	54	40	9	1	54	21	Under 5 5 upwds.										
Windle, North ..	180	58	43	7	5	47	20	180	58	43	7	5	47	20	Under 5 5 upwds.										
Windle, South ..	167	71	28	7	6	42	13	167	71	28	7	6	42	13	Under 5 5 upwds.										
Hardshaw ..	231	70	39	12	11	71	28	231	70	39	12	11	71	28	Under 5 5 upwds.										
Sutton, East ..	157	42	42	2	8	48	15	157	42	42	2	8	48	15	Under 5 5 upwds.										
Sutton, West (H) ..	206	70	49	10	9	45	23	206	70	49	10	9	45	23	Under 5 5 upwds.										
Parr ..	186	84	41	8	6	32	15	186	84	41	8	6	32	15	Under 5 5 upwds.										
Rainhill Asylum ..	98	1	..	..	4	78	15	98	1	..	..	4	78	15	Under 5 5 upwds.										
TOTAL ..	1746	578	372	69	65	492	170	1746	578	372	69	65	492	170	Under 5 5 upwds.										

TABLE B.

Table of Population, and of New Cases of Infectious Sickness, coming to the knowledge of the Medical Officer of Health during the year 1897, in the St. Helens Urban Sanitary District, classified according to Diseases, Ages, and Localities.

WARDS.	POPULATION AT ALL AGES.		Aged under 5 or over 5.	NEW CASES OF SICKNESS IN EACH LOCALITY, COMING TO THE KNOWLEDGE OF THE MEDICAL OFFICER OF HEALTH.											NUMBER OF SUCH CASES REMOVED FROM THEIR HOMES IN THE SEVERAL LOCALITIES FOR TREATMENT IN ISOLATION HOSPITAL.					
	Census, 1891.	Estimated to middle of 1897.		1	2	3-4	FEVERS.			11	1	2	3	FEVERS.		11	12			
							Enteric or Typhoid.	Continued	Puerperal					Enteric or Typhoid.	Puerperal			Observation and other cases		
(a)	(b)	(c)	(e)	Smallpox.	Scarlatina.	Diphtheria. Membranous Group.	Enteric or Typhoid.	Continued	Puerperal	Erysipelas.	Smallpox.	Scarlatina.	Diphtheria.	Enteric or Typhoid.	Puerperal	Erysipelas.	Observation and other cases			
Eccleston, North	8555	9788	Under 5 5 upwds.	..	84	6	2	..	..	..	..	13	..	..	..	..	..			
Eccleston, South	6797	8366	Under 5 5 upwds.	..	104	3	16	..	1	14	..	30	..	5	..	..	..			
Central	8219	8503	Under 5 5 upwds.	..	28	1	1	..	..	7	..	2	..	1	..	..	..			
Windle, North	7481	9352	Under 5 5 upwds.	..	62	3	6	..	1	16	..	10	..	1	..	..	..			
Windle, South	8438	8889	Under 5 5 upwds.	..	31	1	1	..	..	1	..	6	..	1	..	..	..			
Hardshaw ...	9225	10276	Under 5 5 upwds.	..	42	3	12	..	2	16	..	17	..	4	..	..	..			
Sutton, East	8250	9272	Under 5 5 upwds.	..	45	..	4	..	..	..	..	11	..	2	..	..	..			
Sutton, West { Includes sanatorium.	7418	8989	Under 5 5 upwds.	..	57	6	36	..	4	11	..	17	..	13	..	..	..			
Parr.....	8030	9475	Under 5 5 upwds.	..	24	4	..	..	..	..	..	3	..	..	..	..	..			
Rainhill Asylum .....			Under 5 5 upwds.	..	54	2	9	..	4	19	..	14	..	2	..	..	..			
TOTAL	72413	82910	Under 5 5 upwds.	..	37	2	1	..	..	4	..	10	..	6	..	..	..			

The Compulsory Notification of Infectious Diseases Act was adopted in St. Helens on January 7th, 1891.  
 Patients suffering from Infectious Diseases are received free of charge into the St. Helens Corporation Sanatorium, situated at Peasley Cross (West Sutton Ward) and Old Wint (Small Pox Hospital).

TABLE C.—Deaths Registered in the St. Helens Urban Sanitary District.

CAUSE OF DEATH.	WEEKS.													Total for 1st Quarter	WEEKS.												
	1	2	3	4	5	6	7	8	9	10	11	12	13		14	15	16	17	18	19	20	21	22				
Small Pox ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Measles ..	..	..	..	..	..	1	..	..	..	..	..	1	1	3	1	..	..	1	2	4	4	3	..	..	..		
Scarlet Fever ..	..	..	..	1	..	2	1	1	..	1	..	2	..	9	4	2	1	1	3	2	1	2	..	..	..		
Typhus Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Whooping Cough ..	..	..	..	..	..	..	1	1	..	1	..	..	2	5	1	3	1	1	1	..	2	..	..	..	..		
Diphtheria ..	1	..	..	..	3	..	..	..	..	2	1	..	..	7	..	1	..	..	..	..	..	..	..	..	..		
Simple or Continued Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Enteric Fever ..	..	..	..	..	..	..	1	1	..	..	..	1	..	3	..	..	..	..	..	..	..	..	..	..	..		
Influenza ..	..	..	..	..	..	..	..	1	1	..	1	..	..	3	1	..	..	1	..	..	3	1	..	..	..		
Other Zymotics ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Simple Cholera ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Diarrhœa ..	..	1	..	..	1	..	..	1	..	..	..	..	..	3	..	..	..	..	..	..	..	1	..	..	..		
Dysentery ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Remittent Fever and Ague ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Hydrophobia, Anthrax, &c.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Syphilis, &c. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..		
Erysipelas ..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..		
Pyæmia, &c. ..	..	..	2	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..		
Puerperal Fever ..	..	..	1	1	1	..	..	..	..	..	..	..	1	4	..	..	..	..	..	..	..	..	..	..	..		
Thrush, &c. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Want of Breast Milk ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Scurvy ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Chronic Alcoholism ..	..	..	..	..	..	..	..	..	..	..	1	1	..	2	..	..	..	..	..	..	..	..	..	..	..		
Rheumatic Fever ..	..	1	..	..	..	..	..	..	1	..	..	..	..	2	..	..	..	..	1	1	..	..	..	..	..		
Gout ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..		
Ricketts ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Cancer, &c. ..	..	..	..	2	2	..	..	3	1	..	1	1	2	12	1	3	..	1	1	..	..	..	..	..	..		
Tabes Mesenterica ..	..	..	1	..	..	..	..	2	1	1	..	1	..	6	..	..	..	1	1	..	..	..	..	..	..		
Tubercular Meningitis ..	..	1	2	..	..	..	..	..	..	..	1	..	1	5	..	..	1	..	..	..	..	1	..	..	..		
Hydrocephalus ..	..	..	..	..	..	..	..	1	..	..	..	1	..	2	..	..	..	1	..	..	..	..	..	..	..		
Phthisis ..	..	..	1	1	..	3	1	3	2	4	2	4	1	22	2	2	6	2	4	4	5	1	..	..	..		
Scrophula ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..		
Anæmia, Diabetes, &c.	..	1	..	1	..	..	..	..	1	..	..	1	..	4	..	1	..	..	..	..	..	1	..	..	..		
Premature Birth, &c.	..	1	..	1	1	1	1	2	..	2	2	..	..	11	..	..	2	2	..	4	..	2	..	..	..		
Old Age ..	..	2	2	2	1	3	1	2	..	2	..	1	..	16	1	..	3	1	..	..	1	..	..	..	..		
Diseases of Nervous System.	..	3	1	6	1	1	1	..	4	2	1	..	2	22	2	2	3	3	1	1	2	5	..	..	..		
Convulsions ..	..	4	4	1	2	2	1	..	4	2	..	2	..	22	..	2	1	6	1	1	..	2	..	..	..		
Eye, Ear, and Nose ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Laryngitis, Croup, &c.	..	..	2	2	..	..	2	..	..	..	..	..	..	6	1	1	..	..	..	..	1	..	..	..	..		
Bronchitis ..	..	3	1	6	3	8	3	8	3	7	4	2	3	51	4	4	2	3	6	10	3	2	..	..	..		
Pneumonia ..	..	4	1	3	5	3	6	3	5	4	3	3	1	41	3	3	2	6	5	2	1	3	..	..	..		
Pleurisy ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..		
Heart and Blood Vessels ..	..	..	3	2	..	2	..	3	..	2	1	2	2	17	1	2	2	..	2	3	2	3	..	..	..		
Dentition ..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	1	..	..	..	..	2	..	..	..	..		
Diseases of Digestive System.	..	2	2	4	..	3	2	3	1	..	2	1	..	20	2	1	6	..	3	2	..	4	..	..	..		
Lymphatics and other Glands	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Urinary System ..	..	..	3	..	..	..	2	..	..	..	..	..	..	5	..	1	2	2	2	..	2	..	..	..	..		
Generative Organs ..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..		
Abortion or Childbirth ..	..	1	..	1	1	1	..	..	..	..	..	..	1	5	..	2	..	1	..	..	..	..	..	..	..		
Diseases of Bones ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Diseases of Skin ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Accidental Violence ..	..	..	2	1	2	2	2	..	..	..	1	..	1	11	1	..	..	2	1	1	..	..	..	..	..		
Homicidal Violence ..	..	..	..	..	..	..	..	..	..	..	..	..</															

strict, in weeks, during the year ending December 31st, 1897.

Total for 2nd Quarter	WEEKS.													Total for rd Quarter	WEEKS.													Total for 4th Quarter	Total for YEAR.	
	27	28	29	30	31	32	33	34	35	36	37	38	39		40	41	42	43	44	45	46	47	48	49	50	51	52			53
36	..	2	3	4	2	1	..	4	1	..	1	2	3	23	..	1	1	1	2	2	6	2	1	2	1	3	2	1	25	87
19	..	1	2	1	..	1	..	..	..	..	..	1	..	6	1	..	1	..	1	2	1	..	..	..	..	2	2	10	44	
16	1	1	1	..	2	..	1	..	..	..	..	..	1	7	..	1	..	1	..	1	..	1	..	..	..	..	1	5	33	
3	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	1	..	..	1	..	1	..	1	1	2	..	2	9	20	
4	..	..	..	..	..	..	3	2	3	2	4	..	2	16	..	1	2	..	1	3	..	1	1	..	..	..	1	10	33	
12	..	1	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	1	17	
1	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	
5	..	1	3	9	19	15	21	18	15	7	7	4	..	117	2	..	1	..	1	1	..	1	1	..	1	..	..	8	133	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
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1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	2	4	
..	..	..	..	1	1	1	1	..	1	..	..	..	..	4	..	1	..	1	..	..	..	..	..	..	..	..	..	2	10	
..	..	..	..	1	..	..	..	1	1	..	1	1	..	5	..	..	..	..	..	..	..	1	..	..	..	..	..	2	5	
..	..	..	..	..	..	..	..	..	..	..	..	1	1	2	..	..	..	..	..	..	..	1	..	..	..	1	..	2	4	
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1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	1	
6	1	1	..	..	..	2	..	1	..	..	2	2	1	10	2	..	1	2	1	..	..	2	1	..	2	1	..	12	40	
4	1	..	2	2	..	1	3	3	1	1	3	..	..	17	2	..	..	..	..	..	1	1	1	1	..	1	..	7	34	
3	..	..	..	..	..	..	2	..	..	..	..	..	..	2	..	..	1	..	..	..	1	..	1	..	..	..	..	3	13	
2	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	1	6	
37	..	1	3	..	2	..	2	1	3	..	4	1	2	19	3	2	4	2	..	1	2	..	4	1	4	6	5	5	39	117
1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	2	3	
2	..	2	..	..	..	..	..	..	..	..	1	..	..	3	..	..	..	1	..	1	..	1	..	..	..	..	..	3	12	
15	..	1	1	2	..	1	..	1	1	2	..	1	1	11	1	1	1	1	1	..	1	2	1	1	1	2	1	4	18	55
10	1	1	..	1	..	..	..	1	..	1	..	..	2	7	1	..	1	3	..	..	1	..	2	1	3	1	..	13	46	
26	3	2	..	4	..	1	1	2	1	3	3	..	..	20	..	1	4	5	2	3	..	..	1	4	4	4	2	30	98	
21	..	3	5	1	3	4	2	..	1	2	1	..	1	23	..	1	1	..	..	1	4	1	1	1	1	1	2	15	81	
5	..	..	..	..	..	..	1	2	..	..	..	..	1	1	..	..	1	..	..	..	..	1	..	..	..	..	..	2	3	
47	2	5	4	2	3	3	1	1	..	1	1	2	4	3	..	..	1	..	1	..	1	..	1	..	..	..	..	4	18	
45	4	2	5	..	..	1	1	1	1	1	1	1	3	21	8	4	4	4	4	6	2	3	3	1	3	11	3	6	59	186
2	..	..	1	..	..	..	..	..	..	..	1	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	
23	2	..	2	..	..	2	..	..	1	1	2	4	..	14	1	1	1	..	3	..	1	2	1	2	3	1	1	17	71	
3	..	..	..	..	..	..	1	..	..	..	..	1	..	2	1	1	..	..	..	..	..	..	..	..	..	..	..	2	8	
27	..	1	4	9	14	9	5	4	6	1	5	4	..	62	4	2	7	3	1	1	2	..	5	..	2	3	1	31	140	
1	..	..	..	1	..	..	..	..	..	..	..	..	1	1	..	..	1	..	..	..	..	..	..	..	1	1	1	5	2	
13	..	..	..	1	1	..	..	..	..	..	1	1	1	5	..	..	..	1	..	..	..	1	..	..	1	1	1	5	28	
1	..	..	1	1	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	2	
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8	1	1	1	1	..	..	2	1	3	2	..	..	..	12	1	1	1	..	1	..	2	..	2	1	..	3	2	14	45	
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15	..	1	4	2	3	2	1	1	..	2	..	2	2	20	..	2	1	2	1	2	..	2	7	2	..	1	..	2	74	
11	2	1	..	2	1	2	1	1	..	1	..	1	..	12	1	2	..	1	1	1	..	2	..	1	1	1	3	14	42	
1	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	
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19	8	15	20	18	25	21	26	22	17	23	15	22	18	250	21	14	16	21	14	16	17	13	19	15	14	25	22	23	250	885
19	10	12	18	22	25	29	24	27	18	9	20	10	19	243	12	14	21	16	14	17	10	11	20	8	16	21	10	21	211	861
38	18	27	38	40	50	50	50	49	35	32	35	32	37	493	33	28	37	37	28	33	27	24	39	23	30	46	32	44	461	1746





